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104

# HOUSING RESEARCH

# RECHERCHE EN LOGEMENT

Volume 2  
Number 1  
1995

Volume 2  
Numéro 1  
1995







**HOUSING  
RESEARCH**

**RECHERCHE  
EN LOGEMENT**



Volume 2  
Number 1  
1995

Volume 2  
Numéro 1  
1995





HOUSING RESEARCH ORDER FORM

FORMULE DE COMMANDE DE LA  
PUBLICATION RECHERCHE EN LOGEMENT

If you wish to receive any of the completed reports or bibliographies listed, or if you would like to be on the mailing list to receive *Housing Research*, please fill out this form and send it to:

Canadian Housing Information Centre  
Canada Mortgage and Housing Corporation  
700 Montreal Road  
Ottawa, Ontario  
K1A 0P7

Fax (613) 748-4069

Pour recevoir tout rapport terminé ou les bibliographies indiquées, ou bien encore faire ajouter votre nom à la liste d'envoi de *Recherche en logement*, veuillez remplir cette formule et l'envoyer à :

Centre canadien de documentation sur l'habitation  
Société canadienne d'hypothèques et de logement  
700, chemin de Montréal  
Ottawa (Ontario)  
K1A 0P7

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## INTRODUCTION/INTRODUCTION

Under Part IX of the National Housing Act the Government of Canada provides funds to Canada Mortgage and Housing Corporation to conduct research into the social, economic and technical aspects of housing and related fields.

*Housing Research* is compiled and produced on a quarterly basis by the Canadian Housing Information Centre. This publication provides information and access to research which is undertaken and sponsored by the Corporation.

The publication contains information on completed research reports, new publications, videos and bibliographies, as well as ongoing research projects. An alphabetical title index of items listed is included at the end for quick reference.

"Ongoing Projects" refer to research projects which are currently underway. No reports are yet available. Once the project is completed, and a report is available for distribution, it will be listed in *Housing Research* under the "Completed Reports" area with a full bibliographic citation and abstract. The "Ongoing Projects" sections of *Housing Research* contain the following information:

**Title:**

Title of the project, which may not necessarily be the same as the final report.

**Objective:**

Gives a brief description of the project.

**Division:**

Division within CMHC which is managing the project.

**Contractor:**

Individual or firm undertaking the research.

**CIDN:**

Contract Identification Number.

**Central Registry:**

File number to be used to store correspondence between CMHC and the contractor.

En vertu de la Partie IX de la loi nationale sur l'habitation le gouvernement du Canada fournit des fonds à la Société canadienne d'hypothèques et de logement pour la recherche sur les aspects sociaux, économiques et techniques du logement et des domaines connexes.

*Recherche en logement* est produit chaque trimestre par le Centre canadien de documentation sur l'habitation. Il contient des renseignements sur la recherche entreprise et subventionnée par la Société.

La publication présente des renseignements sur les rapports de recherche, les nouvelles publications, les vidéos et les bibliographies, ainsi que sur les projets de recherche en cours. Une liste alphabétique par titres, facile à consulter, se trouve à la fin de l'ouvrage.

Tous les projets non terminés, n'ayant pas encore fait l'objet d'un rapport sont des «projets en cours». Une fois qu'il sera terminé, publié et disponible, le rapport figurera dans la publication *Recherche en logement* sous la rubrique «Rapports terminés» avec références bibliographiques et sommaire. Les sections «Projets en cours» de *Recherche en logement* contiennent les renseignements suivants :

**Titre :**

Titre du projet, qui n'est pas nécessairement le même que celui du rapport final.

**Objectif :**

Brève description du projet.

**Division :**

Division de la SCHL chargée de gérer le projet.

**Contractant :**

Personne ou firme chargée de la recherche.

**NIC :**

Numéro d'identification du contrat.

**Numéro de la gestion des documents :**

Numéro de dossier, sous lequel sera classée la correspondance entre la SCHL et la partie contractante.





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**ÉTUDE DE TRANSMISSION DU SON AU TRAVERS DES MURS EN PLAQUES DE PLÂTRE.**

*Préparé par Le Laboratoire acoustique de l'Institut de recherche en construction du Conseil national de recherches Canada. Préparé pour la Société canadienne d'hypothèques et de logement, l'Institut canadien de la tôle d'acier pour le bâtiment, la Cellulose Manufacturers Association of Canada, Forintek Canada, les Fabricants de Produits de Gypse du Canada, l'Institut de recherche en construction, Owens Corning Fiberglas Canada Inc. et Roxul Inc. Ottawa : SCHL, 1994.*

Le Laboratoire d'acoustique de l'Institut de recherche en construction (IRC) a complété l'étape des mesures d'une étude de transmission du son au travers des murs en plaques de plâtre. Comme les produits de construction et les méthodes d'essai ont évolué, il était nécessaire de réaliser une étude parce que les essais et estimations actuellement pourraient induire en erreur. En outre, bon nombre des résultats déjà publiés ne donnent pas de détails pertinents tels que l'espacement des vis, ou encore ne cadrent pas avec les pratiques usuelles concernant la résistance au feu ou d'autres aspects.

Ce rapport renferme les données relatives à l'indice de transmission acoustique (ITA) pour de multiples murs comportant des détails de construction standards dans l'industrie, avec des matériaux dont les caractéristiques ont été choisies avec soin. Cette série de 250 spécimens constitue le fondement d'une évaluation systématique de la transmission du son au travers de murs en plaques de plâtre. Dans une optique plus immédiate, ce sont les données ITA sur lesquelles pourront compter les constructeurs et organismes de réglementation pour sélectionner les méthodes convenables pour la construction des murs mitoyens de collectifs de logements.

NOTE: Also available in English under the title: *Sound Transmission Through Gypsum Board Walls.*



# ACOUSTICS/ACOUSTIQUE

## SOUND TRANSMISSION THROUGH GYPSUM BOARD WALLS.

*Prepared by the Institute for Research in Construction, Acoustics Laboratory of the National Research Council Canada. Prepared for Canada Mortgage and Housing Corporation, Canadian Sheet Steel Building Institute, Forintek Canada, Gypsum Manufacturers of Canada, the Institute for Research in Construction, Owens Corning Fiberglas Canada Inc., and Roxul Inc. Ottawa: CMHC, 1994.*

The Institute for Research in Construction (IRC) Acoustics Laboratory has completed the measurement phase of a study of sound transmission through gypsum board walls. The study was needed because building products and test methods have changed; consequently, old tests and estimates are potentially misleading. Furthermore, many of the older published results do not clearly identify relevant construction details such as screw spacing, or do not match normal practice for fire resistance or other concerns.

This report presents the sound transmission class (STC) data for a large series of walls constructed with industry-standard details using a carefully characterized set of materials. The combined set of over 250 specimens provide the basis for systematic evaluation of sound transmission through gypsum board wall systems. More immediately, they provide the authoritative assembly of STC data needed by builders and regulators to select constructions suitable for party walls in multi-family dwellings.

NOTE: Aussi disponible en français sous le titre : *Étude de transmission du son au travers des murs en plaques de plâtre.*

## Ongoing Projects/Projets en cours

### MODELLING OF ROAD NOISE AND OPTIMAL BARRIER DESIGN

#### Objective:

This study will apply the newly developed modelling tools to the prediction of road noise attenuation utilizing barriers and berms.

#### Division:

Research Division  
External Research Program

#### Contractor:

Dr. Ken R. Fyfe  
Department of Mechanical Engineering  
University of Alberta  
Edmonton, Alberta  
T6G 2G8

#### CIDN:

1086 0200001

#### Central Registry:

6585-F039

### DEMONSTRATION OF IMPROVED ATTIC VENTILATION AND MOISTURE CONTROL STRATEGIES

#### Objective:

Test unconventional attic ventilation strategies in both new and existing houses. Use the existing attic computer program to help select which venting strategy will work best.

#### Division:

Research Division

#### Contractor:

Sheltair Scientific Ltd.  
#2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 2P1

#### CIDN:

1377 0200001  
1377 0800001

#### Central Registry:

6730-11

## Completed Reports/Rapports terminés

### DEVELOPMENT OF AN INTERIOR DAMPPROOFING STRATEGY TO PREVENT BASEMENT WALL CONDENSATION DURING CURING.

*Prepared by M.C. Swinton and A.N. Karagiozis, Institute for Research in Construction, National Research Council Canada. Prepared for l'Association provinciale des constructeurs d'habitations du Québec and Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994. (External Research Program)*

On behalf of l'Association provinciale des constructeurs d'habitations du Québec (APCHQ), the Institute for Research in Construction (IRC) has undertaken an investigation into the cause and potential solutions to the problem of basement wall condensation during the first summer after construction. The research, which builds on fieldwork done by Unies Ltd. for CMHC, involved the implementation of a computer model to test a hypothesis on the mechanisms involved in basement wall condensation and to evaluate strategies that would defeat the condensation mechanism. The detailed computer simulation tool used was the FSEC model, originally developed by the Florida Solar Energy Center. The model was adapted by IRC to investigate 2-dimensional, dynamic heat and moisture flow in the basement wall, floor slab and surrounding ground.

The simulation results suggest that conditions exist for moisture to accumulate and condense in freshly poured and finished basement walls during warm periods of the year, by way of a vapour-diffusion mechanism which would redistribute the moisture from the concrete to the insulated cavity of the finished wall. As well, building the insulated cavity without building paper between the concrete and the insulation makes this wall particularly susceptible to the vapour diffusion mechanism. Other means to control the mechanism were explored. The results suggest that there may be a better way to assemble a basement wall and operate the house to minimize the risk of this type of condensation.

#### SURVEY OF FINISHED BASEMENTS

##### Objective:

Survey 400 or more finished basements in the Ottawa vicinity, through a short inspection and householder questionnaire regarding basement dampness.

##### Division:

Research Division

##### Contractor:

Rosemary Spencer  
1358 Kingston Avenue  
Unit #1  
Ottawa, Ontario  
K1Z 8L2

Cate Soroczan  
1984 Quincy Avenue  
Gloucester, Ontario  
K1J 6B5

##### CIDN:

1386 0200002  
1386 0200003

##### Central Registry:

6730-16



**CONTRÔLE DE PERFORMANCE DES MURS À OSSATURE D'ACIER ET PLACAGE DE BRIQUE.**

*Préparé par Steven P. Laviolette et H. Keller, Keller Engineering Associates Inc.  
Préparé pour la Division de l'innovation dans l'habitation, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1993.*

Les murs à ossature d'acier recouverts d'un placage de brique (OA-PBr) sont devenus très populaires au Canada au cours des vingt dernières années, mais leur construction a devancé l'établissement de normes de conception et de construction en la matière. Cette situation a suscité des préoccupations quant à la sécurité, l'aptitude au service et la durabilité à long terme des murs OA-PBr.

Pour cette étude les experts-conseils ont procédé à des contrôles de performance in situ de murs OA-PBr, portant sur la performance structurale, les mouvements d'air et d'humidité, ainsi que les gradients de température. La performance d'un mur d'essai a donc été contrôlée au moyen de divers détecteurs de température, d'humidité et de pression d'air, branchés à un système de saisie de données automatisé. Les résultats ont révélé que même si, dans l'ensemble le mur OA-PBr était bien conçu et construit, il ne se comporte pas d'une manière satisfaisante. La condensation à l'intérieur de la cavité risque d'occasionner une dégradation à long terme. Les problèmes de performance observés sont principalement attribuables à quelques faiblesses de conception de base, dont la ventilation insuffisante de la cavité et le manque d'isolation extérieure. De plus, de légers défauts de construction réduisent l'étanchéité à l'air du pare-air/pare-vapeur.

NOTE: Also available in English under the title: *Performance Monitoring of a Brick Veneer/Steel Stud Wall System*. (Compendium of Research 1993)

**Ongoing Projects/Projets en cours****FIELD TEST OF IMPROVED WALLS****Objective:**

To carry out monitoring on a highrise residential building in Ottawa to assess performance of the brick veneer/steel stud envelope.

**Division:**

Housing Innovation Division

**Contractor:**

Keller Engineering Associates Inc.  
1390 Prince of Wales Drive  
Ottawa, Ontario  
K2C 3N6

**CIDN:**

0411 0301001  
0411 0302001  
0411 0303001

**Central Registry:**

6796-3-6

**PREPARATION OF BEST PRACTICE GUIDE FOR FLASHING DETAILS, MASONRY VENEER/ CONCRETE BLOCK CONSTRUCTION AND WOODFRAME CONSTRUCTION**

**Objective:**

To prepare three guides on building envelope design:  
1) a 'best practice' guide for concrete block exterior wall construction; 2) a 'best practice' guide for various exterior wall assemblies with wood frame construction; 3) a 'best practice' guide for the flashing of wood, concrete and steel frame building

envelopes. The documents will contain details, specifications, sequence of construction and information on inspection and commissioning.

**Division:**

Housing Innovation Division

**Contractor:**

Robert Halsall & Associates/Otto & Bryden Arch.  
210 Gladstone Avenue  
Ottawa, Ontario  
K2P 0Y6

**CIDN:**

0974 0300001

**Central Registry:**

6503-15

### **PREPARE A BEST PRACTICE GUIDE FOR MASONRY VENEER/STEEL STUD EXTERIOR WALL CONSTRUCTION**

#### **Objective:**

To prepare a best practice guide for steel stud exterior wall construction: collect and review recent publications, solicit suggestions for additional material to review from authors of known publications and from manufacturers of steel studs.

#### **Division:**

Housing Innovation Division

#### **Contractor:**

Posey Construction  
Specifications  
P.O. Box 1756  
Station M  
Calgary, Alberta  
T2P 2L8

#### **CIDN:**

0839 0300001

#### **Central Registry:**

6503-24

### **RAIN CONTROL AND WIND DRIVEN RAIN**

#### **Objective:**

To carry out work aimed at producing guidelines for the testing and commissioning of pressure equalized rainscreen walls.

#### **Division:**

Housing Innovation Division

#### **Contractor:**

Quirouette Building Envelope  
Specialists  
18 Crispin Private  
Ottawa, Ontario  
K1K 2T8

#### **CIDN:**

1123 0304002  
1123 0300004

#### **Central Registry:**

6793-21-5

### **TESTING OF REINFORCED OR PRE-STRESSED BRICK VENEER WALL SYSTEMS USING A BRICK VENEER WALL SYSTEM**

#### **Objective:**

To demonstrate the feasibility and potential for reinforced or pre-stressed brick veneer wall systems, and to identify further research and development needs including laboratory investigations, design details, and construction guidelines.

#### **Division:**

Research Division  
Housing Technology  
Incentives Program

#### **Contractor:**

Canada Brick  
2121 Britannia Road West  
Box 668  
Streetsville, Ontario  
L5M 2C3

#### **CIDN:**

1177 0200001

#### **Central Registry:**

6521-7-93

### **ZERO-CAVITY, PRESSURE EQUALIZED RAINSCREEN WALL SYSTEM**

#### **Objective:**

To investigate the performance of the zero-cavity, pressure equalized rainscreen wall system. To investigate the consequences of completely filling the air space behind brick cladding with a fibrous, draining insulation to answer the following questions: can masons build this wall, will the insulation drain, will the cavity pressure equalize, will the brick become too warm or too cold, and will the water reach the sheathing by capillary action?

#### **Division:**

Housing Innovation Division

#### **Contractor:**

University of Waterloo  
Building Engineering Group  
Civil Engineering Department  
Waterloo, Ontario  
N2L 3G1

#### **CIDN:**

0689 0300001

#### **Central Registry:**

6793-21-1



### REPAIR OF REINFORCED CONCRETE IN BUILDINGS: S448.1-93: STRUCTURES (DESIGN).

*Prepared by Canadian Standards Association Technical Committee on Repair of Concrete (Buildings). Sponsored by Research Division, Canada Mortgage and Housing Corporation. Toronto: Canadian Standards Association, 1993, i.e. 1994.*

This is the first edition of CSA Standard S448.1, Repair of Reinforced Concrete in Buildings. This Standard sets forth the minimum design considerations for the investigation, specification, and execution of repair work needed to restore reinforced concrete structural components of buildings to a safe and serviceable state. It provides a framework for the design of repair projects; it deals with specification for repair techniques and materials in a generic way only, relying upon the engineer to select appropriate procedures and materials to obtain the desired performance. CSA Standard S448.1 deals with the repair of regular (i.e., not prestressed) reinforced concrete structural elements, and limits the scope to buildings, including parking garages. The Standard addresses the need to ensure the structural integrity and safety of the building during the repair period, and it addresses the need for the engineer to set out the follow up maintenance and monitoring programs which the building owner should implement to assure the desired performance of the repaired structure.

### Ongoing Projects/Projets en cours

#### DEVELOPMENT OF A NEW EDITION OF THE STANDARD FOR CONCRETE CONSTRUCTION FOR HOUSING AND SMALL BUILDINGS (CSA A438)

##### Objective:

To carry out the development of a new edition of the standard for concrete construction for housing and small buildings (CSA A438).

##### Division:

Research Division

##### Contractor:

Canadian Standard Association  
178 Rexdale Boulevard  
Toronto, Ontario  
M9W 1R3

##### CIDN:

1259 0200001

##### Central Registry:

5610-37

#### DURABILITY OF FIBRE-REINFORCED PLASTIC (FRP) REBARS IN CONCRETE STRUCTURES

##### Objective:

Scientific research and development concerning the durability of fibre-reinforced plastic (FRP) rebars in concrete structures.

##### Division:

Research Division

##### Contractor:

National Research Council  
1200 Montreal Road  
Ottawa, Ontario  
K1A 0R6

##### CIDN:

1172 0200001

##### Central Registry:

6711-10

### DIRECTIVES D'INTERPRÉTATION DE LA PHASE 1 DE L'ÉTUDE ENVIRONNEMENTALE D'UN SITE.

*Préparé par Jacques Whitford Environmental Limited. Préparé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994.*

Ce document a été rédigé par Jacques Whitford Environmental Limited à l'intention des propriétaires, des prêteurs, des assureurs hypothécaires, des consultants en environnement et d'autres membres du secteur de l'immobilier en vue de les aider à évaluer les rapports concernant la phase 1 de l'étude environnementale d'un site (EES). Les directives d'interprétation de la phase 1 de l'étude environnementale d'un site (EES) ont été élaborées dans le but de fournir une façon simple et constante de déterminer si un rapport portant sur la phase 1 d'une EES renferme tous les éléments requis par les normes actuelles et si les conclusions formulées sont logiques.

La formule d'évaluation de la phase 1 de l'étude environnementale d'un site peut servir de liste de contrôle pour l'auteur du rapport ou d'outil de vérification du rapport. La formule se divise en neuf parties elles-mêmes subdivisées en points clés concernant chaque partie du rapport. Il faut noter que, dans certains cas, un élément particulier du rapport pourra être accepté même si certains points clés sont incomplets. Il incombe au vérificateur de se servir de son jugement dans l'évaluation des rapports. Pour l'aider en ce sens, chacun des neuf éléments du rapport est commenté à la suite de la formule d'évaluation. Ces commentaires décrivent les points clés, fournissent des exemples et proposent certaines orientations quant aux exigences minimales qui doivent être respectées pour que l'élément soit accepté.

NOTE: Also available in English under the title: *Phase 1 Environmental Site Assessment Interpretation Guidelines.*

### PHASE 1 ENVIRONMENTAL SITE ASSESSMENT INTERPRETATION GUIDELINES.

*Prepared by Jacques Whitford Environmental Limited. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

This document was prepared by Jacques Whitford Environmental Limited for property owners, lenders, mortgage insurers, environmental consultants and others associated with the real estate industry to assist in the evaluation of Phase 1 Environmental Site Assessment (ESA) reports. The objective of the Phase 1 Environmental Site Assessment (ESA) Interpretation Guidelines is to provide a simplified and consistent means for identifying whether or not the Phase 1 Environmental Site Assessment report contains all of the required components by current standards and if the conclusions presented are logically founded.

The Phase 1 Environmental Site Assessment Evaluation Form can be used as a checklist for the author of the report or as a tool to assist in report review. The form is divided into nine report components which are further broken down into key points within each component. It should be noted that in certain cases a report component may be acceptable when some of the key points are incomplete. Some judgement is required in the review of the reports. To assist in applying this judgement, a discussion has been provided for each of the nine report components following the evaluation form. The discussion provides descriptions of the key points, examples and some guidance on the minimum requirements for acceptance of the report component.

NOTE: Aussi disponible en français sous le titre : *Directives d'interprétation de la phase 1 de l'étude environnementale d'un site.*



**FIELD TESTS OF REMEDIAL  
MEASURES FOR HOUSES  
AFFECTED BY HAZARDOUS  
LANDS**

**Objective:**

To monitor the effectiveness  
of remedial measures  
installed in houses across  
Canada to prevent hazardous  
soil gases from entering house  
air.

**Division:**

Research Division

**Contractor:**

CH2M Hill Engineering Ltd.  
180 King Street South  
Suite 600  
Waterloo, Ontario  
N2J 1P8

**CIDN:**

0820 0200001

**Central Registry:**

6719-19

# COOPERATIVE AND NON-PROFIT HOUSING LOGEMENT SANS BUT LUCRATIF ET COOPÉRATIVES

## Ongoing Projects/Projets en cours

### CONSERVATION DU PATRIMOINE IMMOBILIER COOPÉRATIF

#### Objet :

La recherche a pour thème la conservation du patrimoine immobilier coopératif par l'optimisation des activités d'entretien et de réparations prises en charge par les membres.

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Monsieur André Poulin  
École des Hautes Études  
Commerciales  
640 - 333, chemin de la  
Reine-Marie  
Montréal (Québec)  
H3V 1A2

#### NIC :

1281 0200001

#### Numéro de la gestion des documents :

6585-P048-1

### ÉVALUATION DU PROGRAMME PLACEMENT - HABITAT

#### Objet :

Évaluation du programme placement - Habitat retenu aux termes du Programme de subventions de recherche de la SCHL - 1992.

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Robert Chagnon et associés  
4209, avenue Oxford  
Montréal (Québec)  
H4A 2Y5

#### NIC :

1085 0200001

#### Numéro de la gestion des documents :

6585-C066

### PERTINENCE ET FAISABILITÉ DE LA FORMULE COOPÉRATIVE D'HABITATION - ÉQUITÉ

#### Objet :

Le projet de recherche porte sur la conception et la mise en oeuvre d'un programme d'auto-développement pour le secteur coopératif en habitation.

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Madame Marie J. Bouchard  
Centre de gestion des  
coopératives  
333, chemin de la  
Reine-Marie, local 640  
Montréal (Québec)  
H3V 1A2

#### NIC :

1084 0200001

#### Numéro de la gestion des documents :

6585-B090-1

### POUR UNE MISE EN MARCHÉ EFFICIENTE DES COOPÉRATIVES D'HABITATION AVEC INVESTISSEMENT DES MEMBRES

#### Objet :

Évaluer le(s) produit(s) d'habitation coopérative dans une perspective marketing, mais aussi, élaborer une méthodologie de lancement de ces nouveaux concepts.

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Monsieur Guy Ara  
Faculté d'administration  
Université de Sherbrooke  
Sherbrooke (Québec)  
J1K 2R1

#### NIC :

0907 0200001

#### Numéro de la gestion des documents :

6585-A039

### **BARRIER-FREE AND AUTOMATED DEMONSTRATION HOUSE**

#### **Objective:**

To carry out the design, construction and display of a "barrier-free and automated demonstration house" including production of video material, commentary, and report.

#### **Division:**

Research Division

#### **Contractor:**

Adaptable Housing Ltd.  
#4 - 5839 Vine Street  
Vancouver, British Columbia  
V6M 4A2

#### **CIDN:**

1229 110001

#### **Central Registry:**

6535-17-2

### **BARRIER-FREE ENTRANCE DOOR LOCK**

#### **Objective:**

To develop a design for a product "a barrier-free entrance door lock" that will be easy to retro-fit in standard existing doors and be very easy for persons with limited hand strength or dexterity to operate.

#### **Division:**

Research Division  
Housing Technology  
Incentives Program

#### **Contractor:**

RBO Architecture  
#1 - 730 West 7th Avenue  
Vancouver, British Columbia  
V5Z 1B8

#### **CIDN:**

1225 0200001

#### **Central Registry:**

6521-26/93

### **EVALUATION OF CMHC'S ACTIVITIES UNDER THE NATIONAL STRATEGY FOR THE INTEGRATION OF PERSONS WITH DISABILITIES**

#### **Objective:**

Prepare, analyze and document raw data for the evaluation of CMHC's activities under the national strategy for the integration of persons with disabilities.

#### **Division:**

Programs Sector

#### **Contractor:**

Social Data Research Limited  
Suite 750  
130 Slater Street  
Ottawa, Ontario  
K1P 6E2

#### **CIDN:**

1128 1400001

#### **Central Registry:**

6600-1

### **AN EXPLORATION OF DESIRABILITY OF HOUSING LOCATION BY CONSUMERS OF PSYCHIATRIC SERVICES**

#### **Objective:**

To conduct a focus group comprised of tenants from three types of housing, to conduct 60 semi-structured interviews with tenants in the three aforementioned housing settings.

#### **Division:**

Research Division  
External Research Program

#### **Contractor:**

Ms. Katherine M. Boydell  
Queen Street Mental Health  
Centre  
1001 Queen Street West  
Toronto, Ontario  
M6J 1H4

#### **CIDN:**

1272 0200001

#### **Central Registry:**

6585-B104



## FEASIBILITY OF DISABILITY-INTEGRATED, UNIVERSALLY DESIGNED INFILL CO-HOUSING IN AN URBAN SETTING

### Objective:

To create a document which includes: a model of typical infill co-housing based on current literature and post-occupancy evaluation of existing co-housing developments and their residents, etc.

### Division:

Research Division  
External Research Program

### Contractor:

Mr. David Wetherow  
Executive Director  
Association for Community  
Living  
1706 - 90 Garry Street  
Winnipeg, Manitoba  
R3C 4J4

### CIDN:

1101 0200001

### Central Registry:

6585-W018-1

## UN GUIDE ILLUSTRÉ DE CARACTÉRISTIQUES DE CONCEPTION FAVORISANT L'ACCESSIBILITÉ

### Objet :

De produire un guide illustré de caractéristiques de conception favorisant l'accessibilité, qui soient adaptables et efficaces par rapport aux coûts tout en pouvant être intégrées dans divers types d'habitations.

### Division :

Division de la recherche

### Contractant :

Société logique inc.  
3250, boulevard St-Joseph est  
Montréal (Québec)  
H1Y 3G2

### NIC :

1240 1100001

### Numéro de la gestion des documents :

6535-17-1

## HOUSING NEEDS OF PEOPLE WITH DISABILITIES

### Objective:

To provide a profile of the housing characteristics and needs of people with disabilities using data from the 1991 Census and post-censal Health and Activity Limitations Survey (HALS).

### Division:

Research Division

### Contractor:

ARK Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

### CIDN:

1045 0200003

### Central Registry:

6620-2

## HOUSING PEOPLE WITH DISABILITIES

### Objective:

Updating of the NHA publications #5467 and 5468: Housing Disabled Persons.

### Division:

Research Division

### Contractor:

Associated Planning  
Consultants Inc.  
191 Eglinton Avenue East  
Suite 303  
Toronto, Ontario  
M4P 1K1

### CIDN:

1298 0200001

### Central Registry:

6530-35

## STUDY OF HOME ADAPTATIONS CARRIED OUT UNDER THE HASI AND RRAP-D PROGRAMS

### Objective:

To determine the range and types of adaptations that are being carried out by various client groups under both programs; assess the effectiveness of the various adaptations in helping people in their daily lives; assess the relative importance of the various types of adaptations in helping people to continue to live in their own homes; determine the costs associated with different types of adaptations; and identify problems or benefits associated with alternative ways of undertaking the work.

### Division:

Research Division

### Contractor:

Social Data Research Limited  
Suite 750  
130 Slater Street  
Ottawa, Ontario  
K1P 6E2

### CIDN:

1128 1100001

### Central Registry:

6600-1

#### **PROGRESSIVE ACCOMMODATION FOR SENIORS: INTERFACING SHELTER AND SERVICES.**

*Edited by Gloria M. Gutman and Andrew V. Wister. Vancouver, B.C.: Gerontology Research Centre, Simon Fraser University, 1994. Available from: Gerontology Research Centre, Simon Fraser University, 515 West Hastings Street, Vancouver, B.C. V6B 5K3 Price \$26.00 (includes GST & Postage). Phone (604) 291-5062; Fax (604) 291-5066.*

The need for housing options that combine services with shelter has become a major topic of discussion across the country, continent and world because of population aging, changing government policies, changing values, the current economic climate, and the demands of clients, their families, and health care agencies. "Service housing" as it is called in some jurisdictions, most notably Sweden, attempts to provide quality living environments for physically frail elders, special needs groups such as persons with Alzheimer's disease and related disorders, as well as for persons at earlier points in the adult lifespan who live with disabilities.

The purpose of this book is to explore the reasons why clients, agencies and governments are considering options that blend shelter and care, the barriers impeding their development and how these have or may be overcome at both the policy and the practice level. New ways of measuring person-environment fit and the potential of maximizing it via enabling technologies are also examined. The target readership includes researchers, architects, policy makers, developers, care providers and operators of existing seniors housing, all of whom can benefit from a better understanding of the multiple issues involved in interfacing shelter and services.

#### **PROTÉGEZ VOS MEILLEURES ANNÉES : LA SEMAINE NATIONALE DE LA SÉCURITÉ DES AÎNÉS, DU 12 AU 18 NOVEMBRE, 1994 : METTANT EN VEDETTE LES MODIFICATIONS DU LOGEMENT.**

*Parrainé par la Société canadienne d'hypothèques et de logement, le Conseil canadien de la sécurité, l'Association canadienne des ergothérapeutes et Santé Canada. Ottawa : Conseil canadien de la sécurité, 1994.*

Ce guide, qui est destiné aux organismes regroupant des aînés, aux spécialistes en santé publique et aux ergothérapeutes, fournit des informations sur la façon dont les aînés peuvent adapter leur maison afin d'être plus autonomes, plus prudents, plus sécuritaires et plus confortables. Le guide donne un aperçu des trois principales façons dont les aînés peuvent adapter leur maison, soit séparément ou prises ensemble. Il met également en lumière le rôle des ergothérapeutes dans la promotion de l'autonomie et de la sécurité des aînés chez eux ainsi que de nouveaux produits ménagers de conception universelle conçus de façon à être plus sécuritaires et plus faciles à utiliser, non seulement pour les aînés, mais pour l'ensemble de la population.

NOTE: Also available in English under the title: *Safeguard Your Best Years: National Seniors' Safety Week, November 12-18, 1994: Featuring Home Adaptations.*

## ELDERLY/PERSONNES ÂGÉES

### SAFEGUARD YOUR BEST YEARS: NATIONAL SENIORS' SAFETY WEEK, NOVEMBER 12-18, 1994: FEATURING HOME ADAPTATIONS.

*Sponsored by Canada Mortgage and Housing Corporation, Canada Safety Council,  
Canadian Association of Occupational Therapists and Health Canada. Ottawa:  
Canada Safety Council, 1994.*

This guide, which is intended for leaders of seniors' organizations, public health professionals and occupational therapists, provides information on how seniors can adapt their homes to enhance their independence, safety, security and comfort. The guide outlines three basic approaches that seniors can use, either singly or in combination, to adapt their homes. It also highlights the role of occupational therapists in promoting seniors' independence and safety in the home as well as many new household products that incorporate "universal design", i.e., products that are safer and easier to use, not just for seniors but for everyone.

NOTE: Aussi disponible en français sous le titre : *Protégez vos meilleures années :  
La Semaine nationale de la sécurité des aînés, du 12 au 18 novembre,  
1994 : mettant en vedette les modifications du logement.*

### Ongoing Projects/Projets en cours

#### ADAPTING MUNICIPAL HOUSING FOR DEMENTIA

##### Objective:

To contribute to an understanding of what housing providers can do to help residents with dementia age in place.

##### Division:

Research Division  
External Research Program

##### Contractor:

Myra Schiff  
213 - 110 Richmond Street  
East  
Toronto, Ontario  
M5C 2P9

##### CIDN:

1286 0200001

##### Central Registry:

6585-S076-1

#### THE CHINESE ELDERLY: SOCIAL INTEGRATION IN METRO HOUSING

##### Objective:

A study to ask the ethnic elderly through interviews how they are dealing with their communication needs in an attempt to ascertain the level of congruence between the services being offered and the ethnic composition of the buildings under study.

##### Division:

Research Division  
External Research Program

##### Contractor:

Dr. Morris Saldov  
Ginto Consulting and  
Research  
2 Kensington Avenue  
Toronto, Ontario  
M5T 2J7

##### CIDN:

1285 0200001

##### Central Registry:

6585-S042-5

#### COLLOQUE INTERNATIONAL : NOUVELLES SOLUTIONS SOCIALES, ÉCONOMIQUES, TECHNOLOGIQUES ET CULTURELLES POUR NOS SOCIÉTÉS VIEILLISSANTES

##### Objet :

Ce colloque vise à faire reconnaître l'importance d'examiner les effets du vieillissement de la population dans différents secteurs de la vie collective afin que les solutions appropriées permettant de faire face aux changements que le phénomène entraîne puissent être apportées.

##### Division :

Division de la recherche

##### Contractant :

Inst. Universitaire du  
troisième âge de Montréal  
1474, rue Fleury est  
Montréal (Québec)  
H2C 1S1

##### NIC :

1381 0200001

##### Numéro de la gestion des documents :

6525-12



**A GUIDE TO PLANNING,  
DESIGNING, DEVELOPING,  
MARKETING AND MANAGING  
HOUSING FOR OLDER  
CANADIANS**

**Objective:**

To produce an easy to follow and practical guide document that will assist both non-profit groups and the private sector in planning, designing, developing, marketing and managing a wide range of housing choices for older Canadians.

**Division:**

Research Division

**Contractor:**

Baycrest Centre for Geriatric Care  
3560 Bathurst Street  
North York, Ontario  
M6A 2E1

**CIDN:**

0869 0200001

**Central Registry:**

6530-1

**HELPING SENIORS AND  
PEOPLE WITH DISABILITIES  
MAINTAIN THEIR INDEPEN-  
DENCE AT HOME: A GUIDE  
TO DELIVERING HOME  
ADAPTATIONS**

**Objective:**

To produce a how-to guide document which will identify and describe the steps and resources involved in planning, designing, implementing, managing and marketing a variety of different approaches to delivering home adaptations for seniors and persons with disabilities.

**Division:**

Research Division

**Contractor:**

University of Manitoba  
Administration Building  
Room 202  
Winnipeg, Manitoba  
R3T 2N2

**CIDN:**

1256 0200001

1256 1100001

**Central Registry:**

6530-42

**HOUSING NEEDS FOR  
SENIORS - THE  
INTERNATIONAL  
EXPERIENCE**

**Objective:**

To prepare a report on "Housing Needs For Seniors - The International Experience" resulting from attendance at an international conference entitled "The 6th International Research Conference", in Beijing, China.

**Division:**

Research Division

**Contractor:**

Ms. Trina Hayes  
107 Milner Road  
Moncton, New Brunswick  
E1E 2S2

**CIDN:**

1402 0200001

**Central Registry:**

6530-45

**PRODUCE A COMPUTERIZED  
SET OF TOOLS THAT WILL  
ASSIST IN DEVELOPING  
PROFILES OF THE NEEDS  
AND PREFERENCES OF  
SENIORS IN RURAL AREAS**

**Objective:**

To improve the current version of "Seniors", examine ways of streamlining the seniors survey questionnaire and the service providers survey questionnaire with a view to improving data collection and entry systems.

**Division:**

Research Division

**Contractor:**

Tetrad Computer Applications Ltd.  
1145 West Georgia Street  
Vancouver, British Columbia  
V6G 2T3

**CIDN:**

0528 0200002

**Central Registry:**

6530-25

**REGIONAL SENIORS  
RESEARCH ACTIVITY -  
ATLANTIC**

**Objective:**

To provide services for the production of a video entitled "Seniors Housing Options".

**Division:**

Regional Offices

**Contractor:**

Nova Scotia Department of  
Housing and Consumer  
Affairs  
P.O. Box 815  
Dartmouth, Nova Scotia  
B2Y 3Z3

**CIDN:**

0883 1350002

**Central Registry:**

0185-142-1

**REGIONAL SENIORS  
RESEARCH ACTIVITY -  
ATLANTIC**

**Objective:**

To test a model in which trades people retired from the construction field, or other interested volunteers, are trained to inform seniors on home adaptations and repairs.

**Division:**

Regional Offices

**Contractor:**

New Brunswick Department  
of Municipalities, Culture  
and Housing  
P.O. Box 6000  
Fredericton, New Brunswick  
E3B 5H1

**CIDN:**

0883 1350003

**Central Registry:**

0185-142-1

## Ongoing Projects/Projets en cours

### ASSESS THE IMPACT OF ENERGY EFFICIENCY IMPROVEMENT IN APPLIANCES ON DETACHED HOUSING

#### Objective:

Assess the impact of energy efficiency improvement in appliances on detached housing.

#### Division:

Research Division

#### Contractor:

Thermal Engineering  
15 Hanover Court  
Halifax, Nova Scotia  
B3M 3K7

#### CIDN:

1058 0200001

#### Central Registry:

6716-17-2

### ASSESS THE INDOOR ENVIRONMENT AND ENERGY CONSUMPTION CHARACTERISTICS OF 8 MID-RISE RESIDENTIAL BUILDINGS

#### Objective:

To analyze energy and air quality in mid-rise residential buildings, through a survey of four midrise residential buildings in both Toronto and Vancouver.

#### Division:

Research Division

#### Contractor:

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### CIDN:

1373 0200001

1373 0800001

#### Central Registry:

6766-6

### EIFS RAINSCREEN PRODUCT SYSTEM

#### Objective:

Develop new methods of installing exterior insulation and finish systems (EIFS). The new product system will encompass interconnected aspects of the wall portion of the building envelope.

#### Division:

Research Division  
Housing Technology  
Incentives Program

#### Contractor:

STO Enterprises Inc.  
3495 Laird Road  
Units 16-18  
Mississauga, Ontario  
L5L 5S5

#### CIDN:

1268 0200001

1268 0201001

#### Central Registry:

6521-32/93

### ENERGY AUDITS OF TEN HIGH-RISE RESIDENTIAL BUILDINGS

#### Objective:

To determine the total energy gain and losses for 10 high-rise buildings across the country.

#### Division:

Housing Innovation Division

#### Contractor:

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

#### CIDN:

1291 0300001

#### Central Registry:

6765-21

### ENVIRONMENTAL IMPACT STUDY FOR HOUSING ENERGY EFFICIENCY TECHNOLOGY IMPACTS

#### Objective:

To assess the energy efficiency of improved thermal envelope performance and the impact of the envelope changes on the general environment and on indoor air quality.

#### Division:

Research Division  
Panel on Energy Research  
and Development

#### Contractor:

SAR Engineering Limited  
8884 - 15th Avenue  
Burnaby, British Columbia  
V3N 1Y3

#### CIDN:

0847 0200001

0847 0201001

#### Central Registry:

6716-17-1

## **HEAT, AIR, AND MOISTURE TRANSFER IN HIGH-RISE BUILDING ENVELOPES**

### **Objective:**

To develop design guidelines for energy efficiency and durability of wall structures and roofing systems of residential high-rise buildings.

### **Division:**

Research Division

### **Contractor:**

National Research Council  
Building M-20  
Montreal Road  
Ottawa, Ontario  
K1A 0R6

### **CIDN:**

0719 0200001  
0719 0201001

### **Central Registry:**

6793-28

## **INVESTIGATION OF EXTERIOR INSULATING AND FINISH SYSTEMS (EIFS)**

### **Objective:**

To carry out an investigation of exterior insulated and finish systems through controlled laboratory testing. The following will be tested: mesh tensile strength, moisture permeability, joint spacing, sealant bond, and joint design.

### **Division:**

Housing Innovation Division

### **Contractor:**

Warnock Hersey Professional  
Services Ltd.  
211 Schoolhouse Street  
Coquitlam, British Columbia  
V3K 4X9

### **CIDN:**

1057 0300001

### **Central Registry:**

6796-17

## **PRECALCULATION OF THERMAL PERFORMANCE VALUES FOR TABLES IN THE 1995 NATIONAL ENERGY CODE**

### **Objective:**

To precalculate thermal performance values of building assemblies for the National Energy Code for Buildings 1995 and the National Energy Code for Houses 1995.

### **Division:**

Research Division

### **Contractor:**

Enermodal Engineering  
Limited  
368 Phillip Street  
Waterloo, Ontario  
N2L 5J1

### **CIDN:**

1387 0200001

### **Central Registry:**

6780-14



# ENVIRONMENTAL POLLUTION AND CONTROL POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

## Completed Reports/Rapports terminés

### ENQUÊTE IN SITU SUR L'ÉTANCHÉITÉ À L'AIR, LE MOUVEMENT DE L'AIR ET LA QUALITÉ DE L'AIR DANS LES TOURS D'HABITATION : RAPPORT SOMMAIRE.

*Préparé par B.W. Gulay, C.D. Stewart et G.J. Foley, Wardrop Engineering Inc.  
Préparé pour la Division de l'innovation dans l'habitation, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1993.*

Ce rapport récapitule cinq enquêtes indépendantes réalisées in situ sur le territoire canadien pour le compte de la Société canadienne d'hypothèques et de logement. L'objet des enquêtes était de déterminer les taux d'exfiltration d'air à travers l'enveloppe des bâtiments, les taux de fuite d'air entre les appartements et entre les étages, ainsi que la qualité de l'air intérieur d'un nombre représentatif de tours d'habitation. Ainsi, les taux d'exfiltration et taux de fuite entre appartements et étages ont été calculés par des essais de dépressurisation des appartements, des étages et de l'immeuble entier. La qualité de l'air intérieur a été établie au moyen d'un sondage auprès des occupants des immeubles, ainsi que par la recherche et le contrôle de polluants particuliers.

Voici les principaux résultats de l'étude :

- Les taux de fuite d'air des tours d'habitation à l'étude dans les cinq régions excèdent les lignes de conduite proposées par le CNRC en matière de fuites d'air, une plage s'étendant entre 0,05 et 0,15 L/s/m<sup>2</sup> à 75 Pa.
- Pendant les essais de dépressurisation des appartements, les taux de fuite d'air globaux obtenus par unité de mur extérieur ont varié de 2,10 à 3,15 L/s/m<sup>2</sup>, à une différence de pression de 50 Pa sur toute la surface du mur extérieur. Lorsque les essais ont été effectués de telle sorte qu'il n'était pas possible d'isoler les fuites à travers les murs du couloir de celles survenant du mur extérieur, les taux de fuite ont augmenté et atteint une fourchette de 4,56 à 8,33 L/s/m<sup>2</sup>.
- Dans l'ensemble, les taux de fuite par unité de mur extérieur établis au moyen des essais de dépressurisation des étages variaient entre 0,68 et 10,9 L/s/m<sup>2</sup>, à une différence de pression de 50 Pa sur toute la surface du mur extérieur.
- La quantité de polluants dans l'air intérieur était généralement inférieure aux taux maximums établis par Santé et Bien-être social Canada.

NOTE: Also available in English under the title: *Field Investigation Survey of Airtightness, Air Movement and Indoor Air Quality in High-Rise Apartment Buildings: Summary Report*. (Compendium of Research 1993)

## USE OF BIOCIDES BY RESIDENTIAL DUCT CLEANERS.

*Prepared by Don A. Figley, Figley Consulting Associates Ltd. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

This was a small project which followed previous research into the effectiveness of residential duct cleaning. In that earlier study, it became apparent that biocides were being sprayed in ducts following duct cleaning, and little was known about their use, effectiveness, or possible repercussions on human health. For this project, the contractor phoned duct cleaners across the country to discover what biocides were used and with what frequency. He obtained information on the toxicity of the biocides used, largely from the Manufacturers Safety Data Sheets that accompany the product. Five houses had their ducts cleaned and biocides applied. The contractor measured the amount of biocides used and their presence in house air.

The results show that there is a wide variety of biocides being used across the country, and little consistency of application, except by franchised operators. None of the products are accepted for residential duct cleaning by Agriculture Canada. Field sampling of the duct surfaces and house air after the application of biocides in five houses showed relatively low concentrations; however, there are no ambient human health standards for these substances to which these measured airborne concentrations can be compared.

## Ongoing Projects/Projets en cours

### ADVICE ON THE DRAFTING OF EMISSION TEST STANDARDS

#### Objective:

Provide specific advice on improving three draft emission test standards.

#### Division:

Research Division

#### Contractor:

Stewart S. Fritts  
2415 Lazybrook  
Houston, Texas  
77008

#### CIDN:

0200002

#### Central Registry:

6719-3

### CONCENTRATIONS DE RADON-222 AU QUÉBEC

#### Objet :

Évaluer les concentrations moyennes annuelles de radon présentées dans un échantillon représentatif de résidences dans la province de Québec.

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Monsieur Benoît Lévesque  
Centre hospitalier de  
l'université Laval  
2050, boul. René-Lévesque  
ouest  
Ste-Foy (Québec)  
G1V 2K8

#### NIC :

0915 0200001

#### Numéro de la gestion des documents :

6585-L63

### DESIGN AND SPECIFICATIONS OF A CLEAN ADDITION TO AN EXISTING HOUSE

#### Objective:

To develop a generic design for a "clean addition" to an existing house to assist homeowners who want to build a clean environment for a hypersensitive member of the family; to identify appropriate building techniques and materials, and include alternative design options.

#### Division:

Research Division

#### Contractor:

Drerup-Armstrong Ltd.  
P.O. Box 130  
Carp, Ontario  
K0A 1L0

#### CIDN:

1212 1100001

#### Central Registry:

6717-16

## ENVIRONMENTAL POLLUTION AND CONTROL POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

### DEVELOPING TOOLS FOR MEASURING THE PERFORMANCE OF MOLD-TROUBLED HOUSING

**Objective:**

To develop tools for measuring the performance of mold-troubled housing.

**Division:**

Research Division

**Contractor:**

Appin Associates  
472 Academy Road  
2nd Floor  
Winnipeg, Manitoba  
R3N 0C7

**CIDN:**

1243 0200002

**Central Registry:**

6725-19-2

### DEVELOPMENT OF A MECHANICAL SYSTEM FOR A RESIDENTIAL CLEAN HOME

**Objective:**

To determine the best mechanical system or systems that will provide heating and ventilation for the "clean" addition to an existing house.

**Division:**

Research Division

**Contractor:**

Drerup-Armstrong Ltd.  
P.O. Box 130  
Carp, Ontario  
K0A 1L0

**CIDN:**

1213 1100001  
1213 1101001

**Central Registry:**

6717-16

### THE DEVELOPMENT OF A TRAINING PROGRAM FOR INDOOR AIR QUALITY HOUSE EXPERTS

**Objective:**

Development of a training program for IAQ house experts; delivery of the pilot course; evaluation of the pilot course; exploration of future administrators of the program.

**Division:**

Research Division

**Contractor:**

Jools Development  
P.O. Box 69  
Quadeville, Ontario  
K0J 2G0

**CIDN:**

1302 1100001

**Central Registry:**

6717-20

### DIRECTORY OF RESIDENTIAL INDOOR AIR QUALITY PRODUCTS AND SERVICES

**Objective:**

To survey the Canadian indoor air quality industry to identify those firms that offer products or services that could be of interest to householders; to integrate this search with the needs of Industry Canada and Ontario's Green Industry Office; to produce several documents, as required by the three funding agencies, etc.

**Division:**

Research Division

**Contractor:**

Cullbridge Marketing and Communications  
809 Quinlan Road  
Ottawa, Ontario  
K1G 1R8

**CIDN:**

1363 0200001

**Central Registry:**

6717-22

### EMISSION TESTING OF SELECTED BUILDING MATERIALS

**Objective:**

To conduct emission tests on groups of selected building materials (caulks, sealants, urethane foam, and pressed wood products).

**Division:**

Research Division

**Contractor:**

National Research Council  
Institute for Research in Construction  
Montreal Road  
Ottawa, Ontario  
K1A 0R6

**CIDN:**

0964 1100002

**Central Registry:**

6717-7



## **AN EVALUATION OF THE BARRHAVEN HOUSING PROJECT**

### **Objective:**

To undertake an evaluation of the Barrhaven housing project, a housing project in Ottawa, Ontario designed for the environmentally hypersensitive; to survey the occupants and landlord to assess whether their needs are being met and what advantages or limitations are encountered with this type of housing.

### **Division:**

Research Division

### **Contractor:**

Flett Consulting Groups Inc.  
130 Slater Street, Suite 750  
Ottawa, Ontario  
K1P 6E2

### **CIDN:**

1323 0200001  
1323 1100001

### **Central Registry:**

6717-19

## **AN EVALUATION OF THE SCREENING MEASUREMENT AS AN INDICATOR OF AVERAGE ANNUAL INDOOR RADON EXPOSURE**

### **Objective:**

Assess the short term screening measurement as an indicator of the average annual radon levels in homes.

### **Division:**

Research Division  
External Research Program

### **Contractor:**

Michael W.R. LaFontaine  
LaFontaine Consulting  
Services  
106 Krug Street  
Kitchener, Ontario  
N2H 2X9

### **CIDN:**

1276 0200001

### **Central Registry:**

6585-L060-4

## **EXTERNAL REVIEW OF CMHC PROJECT ON EMF (ELECTROMAGNETIC FIELDS) IN CANADIAN HOUSING**

### **Objective:**

To provide an external specialist review of CMHC's exploratory survey project on EMF in Canadian housing which will include a literature review, a field survey of 25 Canadian houses, and a final report.

### **Division:**

Research Division

### **Contractor:**

Dr. Paul Heroux  
McGill University School of  
Occupational Health  
1130 Pine Avenue West  
Montreal (Québec)  
H3A 1A3

ENERGETICS Inc.  
7164 Columbia Gateway Drive  
Columbia, MD  
21046

### **CIDN:**

1051 0200003  
1051 0200002

### **Central Registry:**

6671-4

## **GUIDE TO MECHANICAL EQUIPMENT FOR HEALTHY INDOOR ENVIRONMENTS**

### **Objective:**

To develop a guide to mechanical equipment for healthy indoor environments, covering heating, cooling, ventilating and air purification equipment.

### **Division:**

Research Division

### **Contractor:**

Habitat Design & Consulting  
Ltd.  
1662 West - 75th Avenue  
Vancouver, British Columbia  
V6P 6G2

### **CIDN:**

1031 1100001

### **Central Registry:**

6717-13

## **MECHANICAL SYSTEM FOR THE CMH4C HOUSE**

### **Objective:**

To supply a prototype mechanical system for a prefab house designed specifically for people who are environmentally hypersensitive.

### **Division:**

Research Division

### **Contractor:**

Geddes Enterprises  
45 Massey Lane  
Bramalea, Ontario  
L6S 2V8

### **CIDN:**

0928 1103001

### **Central Registry:**

6760-10

# ENVIRONMENTAL POLLUTION AND CONTROL POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

## A PLANNING MODEL FOR ESTIMATION OF PHOSPHORUS LOADING FROM ON-SITE SYSTEMS

### Objective:

A systematic examination of the variables that may control phosphorus contributions to lakes. The model will recognize loadings leaving an on-site system, differences between failed systems and normal operation, geology, and soils.

### Division:

Research Division  
External Research Program

### Contractor:

Dr. Donald H. Waller  
Technical University of N.S.  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

### CIDN:

0918 0200001

### Central Registry:

6585-W029-2

## PRODUCTION OF AN EMISSIONS TESTING NEWSLETTER AND SUPPORT FOR THE TASK FORCE ON MATERIAL EMISSIONS STANDARDS

### Objective:

To carry out production of an emissions testing newsletter and support for the task force on material emissions standards.

### Division:

Research Division

### Contractor:

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2G 0M8

### CIDN:

1244 0200001

### Central Registry:

6719-3

## PROTOCOL FOR RESIDENTIAL INDOOR AIR QUALITY INVESTIGATIONS

### Objective:

Develop a protocol or expert system to assist in the analysis of problems associated with unhealthy or hazardous residential buildings. The research will identify and investigate several buildings in the Ottawa area to test and improve the protocol.

### Division:

Research Division  
External Research Program

### Contractor:

George E. Vandrish  
Research Director  
Instruscience Limited  
484 Gladstone Avenue  
Ottawa, Ontario  
K1R 5N8

### CIDN:

0926 0200001

### Central Registry:

6585-V017-2

## SOIL GASES IN HIGH-RISE APARTMENT BUILDINGS

### Objective:

To investigate how soil gases enter high-rise apartment buildings, and to see whether underground parking structures act as a barrier to soil gas entry.

### Division:

Research Division

### Contractor:

Jacques Whitford  
Environment Limited  
2781 Lancaster Road  
Suite 200  
Ottawa, Ontario  
K1B 1A7

### CIDN:

1374 0200001

### Central Registry:

6716-23

## **STUDY OF THE HOUSING NEEDS OF THE ENVIRONMENTALLY HYPERSENSITIVE-SOCIO-ECONOMIC/HEALTH FACTORS**

### **Objective:**

To conduct a survey, sampling various regions of the country, to document the socio-economic characteristics and the perceived housing-related needs of environmentally hypersensitive people who are intending to or who would like to make housing changes.

### **Division:**

Research Division

### **Contractor:**

Ekos Research Associates Inc.  
275 Sparks Street  
Suite 801  
Ottawa, Ontario  
K1R 7X9

### **CIDN:**

1257 1100001  
1257 1101001

### **Central Registry:**

6717-19

## **SURVEY OF ADVERSE HEALTH EFFECTS OF MOULD EXPOSURE**

### **Objective:**

To support the survey called "The Respiratory Health Effects of Indoor Moulds". This study will look at about 500 houses to identify how much biologically-active

material there is in house air and dust. Frequency of cough will also be measured and compared to parental reports. In the final phase, the health of occupants will be assessed as well as the reasons for moisture problems in 100 of the houses.

### **Division:**

Research Division

### **Contractor:**

Health and Welfare Canada  
Bureau of Chemical Hazards  
Environmental Health Centre  
Room 130, Tunney's Pasture  
Ottawa, Ontario  
K1A 0L2

### **CIDN:**

0843 0201001

### **Central Registry:**

**6725-19-2**

## **A SURVEY OF ELECTROMAGNETIC FIELD LEVELS IN CANADIAN HOUSING**

### **Objective:**

To review the state-of-the-art in knowledge and housing research into EMF and prepare an interim report, to conduct a field survey of EMF levels in representative housing, and to prepare a report on the findings with recommendations for remedial measures.

### **Division:**

Research Division

### **Contractor:**

The Planetary Association for Clean Energy Inc.  
100 Bronson Avenue  
Suite 1001  
Ottawa, Ontario  
K1T 6G8

### **CIDN:**

1051 0200001

### **Central Registry:**

0427-15

## **BUILD GREEN AND CONVENTIONAL MATERIALS OFF-GASSING TESTS**

### **Objective:**

To test recycled construction materials and conventional building materials for their off-gassing characteristics.

### **Division:**

Housing Innovation Division

### **Contractor:**

Ortech International  
2395 Speakman Drive  
Mississauga, Ontario  
L5K 1B3

### **CIDN:**

0992 0300004

### **Central Registry:**

6790-9



### RESULTS OF FIRE-RESISTANCE TESTS ON SMALL-SCALE INSULATED AND NON-INSULATED GYPSUM BOARD PROTECTED WALL ASSEMBLIES.

*Prepared by M.A. Sultan and G.D. Loughheed, National Fire Laboratory, National Research Council Canada. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

This report presents the results of 48 small-scale fire resistance tests conducted at the National Fire Laboratory on insulated and non-insulated, small-scale, gypsum board protected wall assemblies. Four assembly arrangements were studied: symmetrical installation 1x1 (one layer of gypsum board on both the exposed and unexposed sides); asymmetrical installation 1x2 (one layer of gypsum board on the exposed side and two layers of board on the unexposed side); asymmetrical installation 2x1 (two layers of gypsum board on the exposed side and one layer of board on the unexposed side); and symmetrical installation 2x2 (two layers of boards on each of the exposed and unexposed sides). The effects of gypsum board orientation, resilient channel installation, type and thickness of insulation in the wall cavity, stud type, mass/unit area of regular gypsum board, presence of glass fibre in regular gypsum board core, cellulose fibre insulation application method, and cavity depth on the fire resistance of wall assemblies were investigated.

The results of the non-loadbearing small-scale wall tests showed:

1. The gypsum board orientation had a minor effect on the fire resistance of small-scale assemblies. An assembly with vertical joint orientation provided a better fire resistance than an assembly with horizontal joint orientation.
2. Resilient channel installations on either the exposed or unexposed side or both sides did not play a significant role in fire resistance.
3. Glass fibre insulation in the wall cavity provided a neutral effect on fire resistance, except for assemblies with regular gypsum board.
4. Mineral fibre insulation in the wall cavity provided a 20% to 50% increase in the fire resistance when compared to non-insulated assemblies.
5. Cellulose fibre insulation provided a 22% to 55% increase in the fire resistance compared to non-insulated assemblies.
6. Wood studs provided a 12% better fire resistance than steel studs.
7. The presence of glass fibre in the gypsum board core of (2x2) assemblies did not affect the fire resistance for lightweight regular gypsum board.
8. An assembly with blown dry cellulose fibre insulation provided a 41% increase in the fire resistance compared to an assembly with wet sprayed cellulose fibre insulation.
9. The effect of cavity depth (65 mm to 90 mm) in steel stud assemblies was insignificant.

### MAIN SQUARE RESIDENTIAL COMPLEX, TORONTO: CHARACTERISTIC OF THE HVAC BUILDING SYSTEMS.

*Prepared by Tamblyn, HVAC Consultant. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

The objective of this work was to improve our understanding of how high-rise HVAC systems operate in a 20-year-old building. The work involved evaluating the existing designs (system condition, performance and suitability), determining actual ventilation system airflows for both summer and winter conditions, identifying inefficiencies in the space and domestic water heating systems, evaluating the performance of electrical equipment serving the mechanical systems, and recording benchmark air quality readings. The results were obtained in a 4-tower, 1080-apartment social housing complex, with commercial space, in Toronto.

The bathroom and kitchen exhausts were dirty and unbalanced. Unheated make-up air supplied to the corridors was a problem. Individual unit temperature controls had recently been added, but occupants, particularly in the lower apartments, suffered from lack of heat due to the single-glazed windows. Electrical and fuel energy consumption was 30% more than in comparable-sized structures in Toronto. Domestic water consumption was considerably higher than in apartments which had undergone a water conservation program. The indoor air quality was within international threshold levels for Total Volatile Organic Compounds. The energy consumed by relatively new refrigerators was almost double the current Energuide published recommendations.

Modifications are proposed for the plumbing, space heating, ventilation and garage ramp heater control systems. The changes recommended will not only improve occupant comfort and system performance, but will reduce energy and environmental waste. Payback periods are as low as 1.5 years.

### Ongoing Projects/Projets en cours

#### DEVELOP DESIGN GUIDELINES FOR HEATING AND VENTILATING SYSTEMS IN MULTI-UNIT RESIDENTIAL BUILDINGS

##### Objective:

To improve the installation and operating characteristics of the energy consuming systems in high-rise residential structures.

##### Division:

Research Division

##### Contractor:

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K1A 0M8

##### CIDN:

1042 0200001

##### Central Registry:

6725-13-2

# HIGH-RISE CONSTRUCTION CONSTRUCTION D'IMMEUBLES DE GRANDE HAUTEUR

## Completed Reports/Rapports terminés

### DÉFI IDÉES : FINALISTES RÉGIONAUX.

*Ottawa : Société canadienne d'hypothèques et de logement : Ressources naturelles Canada, 1994.*

Le Défi IDÉES (Intégration, Durabilité, Économie, Efficacité énergétique, Solutions) est une initiative conjointe de la Société canadienne d'hypothèques et de logement (SCHL), de Ressources naturelles Canada et d'autres parrains comme Hydro Québec, l'Association du gaz naturel de l'Ontario et du Programme de garantie des maisons neuves de l'Ontario. Dans le cadre de ce Défi, on a demandé à des équipes de conception et de promoteurs d'un bout à l'autre du pays de présenter des projets de réalisation de tours d'habitation résidentielle où l'on instaurerait des normes élevées de durabilité de l'enveloppe, d'efficacité énergétique, de qualité de l'air intérieur, d'impact sur l'environnement et d'accessibilité. Cette brochure décrit brièvement les meilleurs concepts présentés, les cinq projets finalistes, un par région du pays, notamment la C.-B., les Prairies, l'Ontario, le Québec et les provinces de l'Atlantique.

NOTE: Also available in English under the title: *IDEAS Challenge: Regional Finalists.*

### IDEAS CHALLENGE: REGIONAL FINALISTS.

*Ottawa: Canada Mortgage and Housing Corporation: Natural Resources Canada, 1994.*

The IDEAS (Integrated, Durable, Energy Efficient, Affordable Solution) Challenge is a joint initiative of Canada Mortgage and Housing Corporation and Natural Resources Canada along with the support of other sponsors (Hydro Québec, Ontario Natural Gas Association and Ontario New Home Warranty Program). The Challenge called on design teams and developers from across the country to create proposals for high-rise buildings that meet high standards for envelope durability, energy efficiency, indoor air quality, environmental impact and accessibility. This magazine describes the best of those designs – five finalists, one from each region of the country - B.C., the Prairies, Ontario, Québec, and the Atlantic Provinces.

NOTE : Aussi disponible en français sous le titre : *Défi IDÉES : finalistes régionaux.*



**THE INTEGRATED  
HIGH-RISE BUILDING  
ENVELOPE IDEAS  
CHALLENGE COMPETITION**

**Objective:**

Planning, development and execution of a design competition for high-rise building technology, and a comprehensive communications and promotional plan, and fundraising plan and the execution of these activities.

**Division:**

Housing Innovation Division

**Contractor:**

Energy Technology Access Group Inc.  
110 - 2103 Airport Drive  
Saskatoon, Saskatchewan  
S7L 6W2

**CIDN:**

1326 0300001

**Central Registry:**

6571-1

**DEVELOPMENT OF A  
COMMISSIONING PLAN FOR  
THE WINNERS OF THE  
IDEAS CHALLENGE**

**Objective:**

Develop a plan for commissioning the building envelope for thermal performance, airtightness and water penetration control to be utilised by the winners of the IDEAS Challenge.

**Division:**

Housing Innovation Division

**Contractor:**

Morrison Hershfield Limited  
2440 Don Reid Drive  
Ottawa, Ontario  
K1H 8P5

**CIDN:**

0840 0306001

**Central Registry:**

6793-31

**IDEAS CHALLENGE -  
MONITORING PLAN**

**Objective:**

To develop a plan for monitoring the building envelope for thermal performance, airtightness and water penetration control to be utilised by the winners of the IDEAS Challenge.

**Division:**

Housing Innovation Division

**Contractor:**

Quirouette Building Specialists Limited  
18 Crispin Private  
Ottawa, Ontario  
K1H 8P5

**CIDN:**

0840 0306003

**Central Registry:**

6793-31

**INDUSTRY GUIDELINES ON  
THE COMPARTMENTALIZING  
OF THE PRESSURE  
EQUALIZED CAVITY**

**Objective:**

To produce industry guidelines on the compartmentalizing of the pressure equalized cavity.

**Division:**

Housing Innovation Division

**Contractor:**

Boundary Layer Wind Tunnel Laboratory  
University of Western Ontario  
London, Ontario  
N6A 5B9

**CIDN:**

1123 0300002

**Central Registry:**

6793-21-3

**INVESTIGATE THE EFFECTS  
OF COMPARTMENTALIZING  
APARTMENTS OF HIGH-RISE  
BUILDINGS TO REDUCE  
STACK PRESSURES**

**Objective:**

To carry out a study to investigate the effects of compartmentalizing apartments of high-rise buildings to reduce stack pressures.

**Division:**

Housing Innovation Division

**Contractor:**

Morrison Hershfield Limited  
2440 Don Reid Drive  
Ottawa, Ontario  
K1H 8P5

**CIDN:**

1331 0300001

**Central Registry:**

6725-24

## HIGH-RISE CONSTRUCTION CONSTRUCTION D'IMMEUBLES DE GRANDE HAUTEUR

### OPERATING COST PROFILES IN MULTI-UNIT RESIDENTIAL BUILDINGS

**Objective:**

To obtain operating cost profiles in Canadian multi-unit residential buildings.

**Division:**

Research Division

**Contractor:**

Real Estate Institute of  
Canada  
305-2200 Lakeshore Blvd.  
West  
Toronto, Ontario  
M8V 1A4

**CIDN:**

1024 0200001

**Central Registry:**

6600-35

### OPERATING COST PROFILES IN MULTI-UNIT RESIDENTIAL BUILDINGS

**Objective:**

To obtain operating cost profiles in Canadian multi-unit residential buildings.

**Division:**

Research Division

**Contractor:**

BOMA Canada  
#2012 - 20 Queen Street West  
Toronto, Ontario  
M5H 3R2

**CIDN:**

1024 0200002

**Central Registry:**

6600-35

## HOME AUTOMATION/HABITATIONS – AUTOMATISATION

### Ongoing Projects/Projets en cours

#### **A STUDY TO IDENTIFY COMMERCIALLY FEASIBLE RESIDENTIAL AUTOMATION PRODUCTS AND STRATEGIES**

##### **Objective:**

To organize two workshops in Ottawa to identify salient technical issues as a necessary background for subsequent interviews and to analyse this information in conjunction with subsequent workshops, interviews and focus groups to produce a report.

##### **Division:**

Research Division

##### **Contractor:**

Canadian Automated Building  
Association (CABA)  
1200 Montreal Road  
Building M-20  
Ottawa, Ontario  
K1A 0R6

##### **CIDN:**

1254 020001

##### **Central Registry:**

6702-4



## HOME OWNERSHIP/HABITATIONS – POSSESSION

### Ongoing Projects/Projets en cours

#### **AN EXAMINATION OF THE FEASIBILITY OF DEVELOPING A CANADIAN HOMEOWNER'S MANUAL**

##### **Objective:**

To determine whether the development of a homeowner's manual is a feasible and appropriate undertaking for CMHC and, if so, identify the most effective ways in which it can be produced and delivered and maintained.

##### **Division:**

Research Division

##### **Contractor:**

Reid/Foster Associates  
55 Rosebery Avenue  
Ottawa, Ontario  
K1S 1W1

##### **CIDN:**

1314 0200001

##### **Central Registry:**

6702-5

#### **HOME OWNERSHIP PROGRAMS PARTICIPANT TRACKING PROJECT**

##### **Objective:**

A methodological report documenting the data collection methods and data elements required for surveying program participants.

##### **Division:**

Program Evaluation Division

##### **Contractor:**

SPR Associates Incorporated  
2378 Danforth Avenue  
2nd Floor  
Toronto, Ontario  
M4C 1K7

##### **CIDN:**

1112 0500001

##### **Central Registry:**

0429-2

## Ongoing Projects/Projets en cours

### THE HOUSING NEEDS OF HOMELESS CANADIANS

#### Objective:

To collect data from shelters, hostels, social agencies, private agencies, and public sources in the Toronto area.  
To interview homeless persons as well as those who work with the homeless.

#### Division:

Research Division  
External Research Program

#### Contractor:

Dr. Thomas Fleming  
Department of Sociology and  
Anthropology  
University of Windsor  
Windsor, Ontario  
N9B 3P4

#### CIDN:

0748 0200001

#### Central Registry:

6585-F036

## HOUSE CONSTRUCTION HABITATIONS – CONSTRUCTION

### Completed Reports/Rapports terminés

#### ECONOMIC IMPACTS OF RESIDENTIAL CONSTRUCTION.

*Prepared by DRI Canada. Prepared for Market Analysis Centre, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1993, i.e. 1994.*

This study identifies and expresses the contribution of residential construction expenditures and its major components at their 1992 level of activity in terms of person-years of employment and billions of 1986 dollars of value-added by stage of impact and industry. The major residential investment components are: new residential construction spending, alterations and improvements spending, and residential transfer costs. Estimates are provided to quantify the contribution of each residential construction investment category by stage of impact: direct, indirect and induced. A summary table has been created for each residential investment component and for each stage of impact with respect to the following key industries: agriculture; forestry; fishing and trapping; mining; construction; manufacturing; transportation; communication and utilities; trade; finance; insurance and real estate; and service.

Summary findings include:

1. About 30 person-years of employment are created for each million dollars of new residential investment. Of these 30 person-years, only 5.4 are created directly on-site. Much of the employment is created indirectly off-site (18.3) or induced through income spending (6.2).
2. 1.5 million dollars of Gross Domestic Product (mostly in wages and profits) are also created for each million dollars of new residential spending.

NOTE: Aussi disponible en français sous le titre : *Les Retombées économiques de la construction résidentielle.*

#### MISE EN SERVICE DE L'ENVELOPPE DU BÂTIMENT ET VÉRIFICATION DES FUITES D'AIR.

*Préparé par Richard L. Quirouette et David L. Scott, Morrison Hershfield Ltd. Préparé pour la Division de l'innovation dans l'habitation, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1993.*

Les fuites d'air endommagent l'enveloppe du bâtiment et entraînent des conséquences fâcheuses pour les propriétaires d'immeubles et leurs occupants. Les coûts énergétiques augmentent, le confort de l'occupant diminue et le propriétaire voit monter en flèche ses frais de réparation et de remplacement des immobilisations. La mise en service du pare-air au sein de l'enveloppe d'un bâtiment peut contribuer à éviter ces conséquences. Le sens du terme «mise en service», qui signifie généralement un processus amorcé dès la fin d'un ouvrage, a été modifié sensiblement. Ce document présente une approche visant à étendre le processus de mise en service du pare-air à l'énoncé de projet, à la validation de la conception et à la certification progressive durant et possiblement après la construction.



À l'étape de l'énoncé du projet, le propriétaire doit définir des exigences de performance précises pour le pare-air. L'équipe de conception doit produire un rapport de progression sur les détails validés, de l'étape du concept aux documents d'appel d'offres finaux, confirmant que la performance précisée dans l'énoncé de projet peut être obtenue si la construction se fait selon les plans. Durant la construction, la certification progressive de la performance des matériaux, des éléments et des assemblages essentiels est nécessaire pour que l'ouvrage construit satisfasse aux mêmes exigences de performance. À l'achèvement des travaux, le pare-air peut être ou ne pas être mis en service intégralement. Le processus de mise en service décrit vise à fournir au propriétaire un pare-air convenant tout à fait à son bâtiment une fois la construction terminée. Pour que la performance du pare-air se maintienne durant l'existence du bâtiment, le document présente également une méthode de contrôle de la performance, de l'entretien et des réparations.

NOTE: Also available in English under the title: *Commissioning and Monitoring the Building Envelope for Air Leakage.*

## **LES RETOMBÉES ÉCONOMIQUES DE LA CONSTRUCTION RÉSIDENTIELLE.**

*Préparé par DRI Canada. Préparé pour le Centre d'analyse de marché, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1993, i.e. 1994.*

Cette étude cerne et décrit la contribution des dépenses en construction résidentielle et ses principaux éléments au niveau d'activité de 1992. Cette contribution est exprimée en termes d'années-personnes au chapitre de l'emploi et en milliards de dollars de 1986 de valeur ajoutée par étape de retombée et par industrie. Les principaux éléments de la construction résidentielle sont les suivants : les dépenses en construction résidentielle neuve, les dépenses pour les transformations et les améliorations et les coûts des transferts résidentiels. On calcule des estimations afin de quantifier la contribution de chaque catégorie de construction résidentielle selon les étapes des retombées : directe, indirecte et induite.

Un tableau sommaire a été créé pour chaque élément de l'investissement résidentiel et pour chaque étape des retombées par rapport aux industries clés : agriculture, foresterie, pêches, chasse et piégeage, mines, construction, fabrication, transports, communications et services publics, commerce, finances, assurances et immobilier, services.

Voici un résumé des conclusions du rapport :

1. Environ 30 années-personnes d'emploi sont créées par million \$ investi dans les logements neufs. Parmi ces 30 années-personnes, seulement 5,4 sont créées directement sur les lieux. La plupart de ces emplois sont créés indirectement en dehors des lieux (18,3) ou induits par la dépense du revenu (6,2).
2. Chaque million de dollars dépensé pour bâtir des habitations génère 1,5 million \$ de Produit intérieur brut (PIB) principalement sous forme de salaires et de profits.

NOTE: Also available in English under the title: *Economic Impacts of Residential Construction.*

## HOUSE CONSTRUCTION HABITATIONS – CONSTRUCTION

### Ongoing Projects/Projets en cours

#### **OPTIMISATION DE LA PERFORMANCE D'UN PROCÉDÉ DE RESURFA- CAGE DE MURS DE BÉTON OU DE MAÇONNERIE**

##### **Objet :**

Étude visant à améliorer le procédé de fabrication et les performances générales d'un nouveau procédé de revêtement pour bâtiment.

##### **Division :**

Division de la recherche  
Programme d'encouragement  
à la technologie du bâtiment  
résidentiel

##### **Contractant :**

Michel Fortin  
Fortex Inc.  
1415 rue St-Pierre Ouest,  
app. 5  
St-Hyacinthe (Québec)  
J2T 1P3

##### **NIC :**

1266 0200001

##### **Numéro de la gestion des documents :**

6521-30/93

### SITUATION DU LOGEMENT AU CANADA (LNH 6777).

*Ottawa : Société canadienne d'hypothèques et de logement, 1994.*

Le but de ce document est de faire rapport sur l'état du logement au Canada et d'analyser les tendances du secteur de l'habitation, en vue de répondre à une question fondamentale : Les Canadiens sont-ils bien logés?

Dans le cadre de cette étude, le rapport examine aussi plusieurs questions connexes :

- Quels changements sont survenus dans le parc de logements et dans sa capacité de contribuer à la satisfaction des résidents et à la qualité de vie?
- Comment la nature de la demande de logements a-t-elle évolué ces dernières années?
- Comment a évolué la capacité des Canadiens de se payer un logement convenable et d'accéder à la propriété?
- Qu'est-ce que les tendances et les circonstances actuelles laissent prévoir pour l'avenir?

Avant de répondre à ces questions, le rapport décrit brièvement comment on produit des logements au Canada, en faisant ressortir le rôle et les caractéristiques des divers acteurs du système d'offre de logements. Il aborde aussi les grandes lignes de l'évolution de la politique de logement et des partenariats qui produisent et gèrent le portefeuille de logements sociaux du Canada, expliquant à partir de données historiques l'origine de la situation actuelle et son évolution probable.

NOTE: Also available in English under the title: *The State of Canada's Housing* (NHA 6776).

### THE STATE OF CANADA'S HOUSING (NHA 6776).

*Ottawa: Canada Mortgage and Housing Corporation, 1994.*

The purpose of this document is to report on the state of Canada's housing and to analyze trends in the housing sector. The report is structured to answer a very basic and important question: How well housed are Canadians?

In addressing this issue a number of related questions are also explored. These are:

- What changes have occurred in the housing stock and in its capacity to contribute to residential satisfaction and quality of life?
- How has the nature of housing demand changed in recent years?
- Has there been a change in the ability of Canadians to afford decent housing and to access homeownership?
- Finally, what do the trends and current circumstances mean for the future?

Before answering these questions the report briefly describes how housing is provided in Canada, highlighting the roles and characteristics of the various participants in the housing supply system. At a general level, it also discusses changes in housing policy and the partnerships that deliver and manage Canada's social housing portfolio. Historical material is used to explain how the current housing situation has developed and what the future may hold.

NOTE : Aussi disponible en français sous le titre : *Situation du logement au Canada* (LNH 6777).



## Ongoing Projects/Projets en cours

### A.Q.M.E. STUDY TOUR OF EUROPE - NOVEMBER, 1992

#### Objet :

Cette aide est accordée pour la production d'un rapport analytique fondé sur les observations des participants au voyage d'études en question.

#### Division :

Relations internationales

#### Contractant :

Assoc. Québécoise pour la maîtrise de l'énergie  
5, place Ville-Marie  
Bureau 903, 9-étage  
Montréal (Québec)  
H3B 2G2

#### NIC :

1055 0900001

#### Numéro de la gestion des documents :

0225-11

### THE CANADIAN EXPERIENCE TO DATE WITH HOUSING RELATED SAFETY AUDIT TOOLS

#### Objective:

This research project is intended to examine the issue of personal security and housing through two sub projects. The first project involves the development of a status paper of the current work being done by various groups in the development and use of housing-related safety audit tools. The second will provide a critical review of the work done on housing-related safety and security standards.

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

The Women's Action Centre  
Against Violence  
1206-170 Laurier Avenue West  
Ottawa, Ontario  
K1P 5V5

#### CIDN:

1299 0100001

#### Central Registry:

6855-7

### EXPENDITURES ON HOUSING THROUGH THE SOCIAL ASSISTANCE PROGRAMS

#### Objective:

To determine the magnitude of housing expenditures through the programs of social assistance, by private and public sectors.

#### Division:

Senior Vice-President's Office

#### Contractor:

Canadian Housing and Renewal Association  
251 Laurier Avenue West  
Suite 401  
Ottawa, Ontario  
K1P 5J6

#### CIDN:

1382 0600001

#### Central Registry:

0238/C20

### FUTURE ECONOMIC CONDITIONS AND THE HOUSING SECTOR

#### Objective:

To study the potential impacts of various scenarios of long term economic conditions, including the possibility of deflation, for the housing sector. The research will include a review of the general conditions associated with continued slow economic growth and deflationary contraction and pay special attention to the behaviour of households, the housing industry and financial institutions in such contexts. Through the development of scenarios of future economic conditions, the study will explore the implications for various components of the housing sector.

#### Division:

Research Division  
Centre for Future Studies in Housing and Living  
Environments  
Experts in Residence Program

#### Contractor:

Nicole Morgan  
377 Maple Lane  
Ottawa, Ontario  
K1M 1H7

#### CIDN:

1015 0202001

#### Central Registry:

6855-5

## **HIFE-BASED HOUSE PRICE INDEXES FOR CANADIAN CITIES AND MLS AVERAGE PRICES**

### **Objective:**

To provide an inexpensive price index showing house price change in Canadian CMA's starting in 1990; to provide evidence on the reliability of the MLS price averages as price indexes for Canadian CMA's.

### **Division:**

Research Division  
External Research Program

### **Contractor:**

Mrs. Marion Steele  
Associate Professor  
Department of Economics  
University of Guelph  
Guelph, Ontario  
N1G 2W1

### **CIDN:**

1288 0200001

### **Central Registry:**

6585-S037-4

## **INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS**

### **Objective:**

To prepare the federal housing portion of the Third Report of Canada to the United Nations Committee on Economic Social and Cultural Rights. The report will follow the guidelines set out by the Committee for all member states, and will also include consideration of issues raised in the Committee's response to the Second Report of Canada.

### **Division:**

Strategic Planning and Policy  
Development Division

### **Contractor:**

Focus Consulting  
40 Java Street  
Ottawa, Ontario  
K1Y 3L3

### **CIDN:**

1400 0100001

### **Central Registry:**

6865-18

## **INTERNATIONAL YEAR OF THE FAMILY PUBLICATION**

### **Objective:**

Preparation of three housing profiles for an upcoming International Year of the Family publication.

### **Division:**

Statistical Services Division

### **Contractor:**

Statistics Canada  
D274 Jean Talon Building  
Tunney's Pasture  
Ottawa, Ontario  
K1A 0T6

### **CIDN:**

1108 0400008

### **Central Registry:**

7050-7

## **MAXIMIZATION OF COMMUNITY BENEFITS DERIVED FROM HOUSING PROGRAMS IN REMOTE COMMUNITIES**

### **Objective:**

This project was designed to help remote communities realize full benefits of self-help housing programs (RNH demo projects) and, to

explore opportunities for further application in community economic development of skills the residents developed through self-help housing programs. The community identified for study was Sheshatshiu, Labrador.

The project comprises three stages which are:

- A community survey of skills and skill levels, especially those gained in conjunction with RNH housing development, towards the development of a community skill inventory;
- The assessment of these skills relative to potential initiatives in community economic development; and
- The development of a "How To" manual which other communities could use to replicate the inventory and assessment process.

### **Division:**

Strategic Planning and Policy  
Development Division

### **Contractor:**

Terpstra and Associates Ltd.  
324 Hamilton River Road  
P.O. Box 10, Station "A"  
Goose Bay, Newfoundland  
A0P 1S0

### **CIDN:**

0798 0100001

### **Central Registry:**

6850-2

### PRESTON DEMONSTRATION

**Objective:**

To determine the viability of a self-built housing assistance option in an urban setting.

**Division:**

Senior Vice-President's Office  
Policy, Research and  
Communications

**Contractor:**

The Nova Scotia Department  
of Housing and Consumer  
Affairs  
Alderney Gate  
40 Alderney Drive, 5th Floor  
P.O. Box 815  
Dartmouth, Nova Scotia  
B2Y 3Z3

**CIDN:**

1011 0600001

**Central Registry:**

8390/2200-14

### PROCEEDINGS OF THE HABITAT 94 CONFERENCE

**Objective:**

To support production of bilingual proceedings of the Habitat 94 conference - a joint conference between the Canadian Institute of Planners and the International Federation of Housing and Planning.

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

**Contractor:**

Canadian Institute of Planners  
541 Sussex Drive  
2nd Floor  
Ottawa, Ontario  
K1N 6Z6

**CIDN:**

1295 0200002

**Central Registry:**

6855-2-3

### ROLE OF HOUSING IN AN ENABLING SOCIETY

**Objective:**

Analyze and discuss the various roles housing policy can play in the context of the enabling society model. Propose various ways housing policies can be used to promote the philosophy of the enabling society while elaborating on CMHC's role in this regard.

**Division:**

Strategic Planning and Policy  
Development Division

**Contractor:**

Ekos Research Associates  
275 Sparks Street  
Suite 801  
Ottawa, Ontario  
K1R 7X9

**CIDN:**

1006 0100001

**Central Registry:**

6865-11

### TRI-COUNTRY CONFERENCE 1994

**Objective:**

To support the production of 12 policy research papers addressing the broader influences and possible directions for housing policy in each of Canada, the U.S. and the U.K. and to ensure the effective exchange of these research findings among academics and practitioners from each of the three countries.

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

**Contractor:**

Fannie Mae  
Office of Housing Policy  
Research  
3900 Wisconsin Avenue N.W.  
Washington, D.C.  
20016

**CIDN:**

1206 0200001

**Central Registry:**

6855-1



### **QUÉBEC REGULATIONS AND AFFORDABILITY MEASUREMENTS: SINGLE FAMILY STARTER HOMES IN THIRTY CITIES AND TOWNS OF QUÉBEC: REPORT.**

*Prepared by Claude Beaulac, SCAUR.SIA in cooperation with Pierre Bélanger Plus. Prepared for L'Association provinciale de constructeurs d'habitations du Québec, Canada Mortgage and Housing Corporation and L'Union des municipalités du Québec. Ottawa: CMHC, 1993, i.e. 1994.*

There are many regulations in Quebec which have a significant impact on the cost of new residential construction and, consequently, on the affordability and accessibility of new housing. This study has as its primary objective to analyze the impact of this regulatory framework on the selling price and affordability of new, single-family starter homes in approximately thirty cities and towns scattered across the six major population centres of Quebec, namely the Outaouais, Trois-Rivières, Québec, Sherbrooke, Chicoutimi and Montreal. The computer model DéveloppeurPLUS was used to estimate production costs related to land development operations, production costs and the final selling price of the house as well as the monthly occupancy costs, the gross income required to purchase the dwelling, and the impact on its affordability.

The results indicate that it is impossible to measure the overall impact of Quebec's regulations on the affordability of starter homes. However, the consultants were able to evaluate the impact of certain variations in regulations which affect house pricing and, therefore, the affordability of houses in the six metropolitan census regions. They were also able to estimate regional variations and the sensitivity of affordability in terms of regionally-unique factors.

NOTE : Aussi disponible en français sous le titre : *Réglementations québécoises et mesures de l'abordabilité : le cas de la maison unifamiliale neuve de premier accédant dans trente villes québécoises : rapport.*

### **RÉGLEMENTATIONS QUÉBÉCOISES ET MESURES DE L'ABORDABILITÉ : LE CAS DE LA MAISON UNIFAMILIALE NEUVE DE PREMIER ACCÉDANT DANS TRENTÉ VILLES QUÉBÉCOISES : RAPPORT.**

*Préparé par Claude Beaulac, SCAUR.SIA avec la collaboration de Pierre Bélanger Plus. Préparé pour l'Association provinciale des constructeurs d'habitations du Québec, la Société canadienne d'hypothèques et de logement et l'Union des municipalités du Québec. Ottawa : SCHL, 1993, i.e. 1994.*

Plusieurs règlements québécois affectent significativement les coûts des nouvelles constructions résidentielles et, par voie de conséquence, l'abordabilité et l'accessibilité des nouveaux logements. Cette étude a pour objectif principal d'analyser les impacts de ce cadre réglementaire sur le prix de vente et l'abordabilité des nouvelles maisons unifamiliales de premier accédant dans une trentaine de villes réparties dans les six principales agglomérations québécoises, à savoir l'Outaouais, Trois-Rivières, Québec, Sherbrooke, Chicoutimi et Montréal. Le modèle informatique développeurPLUS a été utilisé pour estimer les coûts de revient pour l'opération de mise en valeur du terrain, les coûts de revient et du prix de vente final de la maison, ainsi que les coûts mensuels d'occupation de la maison, le revenu brut nécessaire à l'acquisition du logement et l'impact sur le niveau d'abordabilité de celui-ci.

## HOUSING AFFORDABILITY/LOGEMENT ABORDABLE

Les résultats indiquent qu'il n'est pas possible d'évaluer l'impact global de la réglementation québécoise sur l'abordabilité des maisons de premier accédant. Les consultants ont cependant réussi à évaluer l'impact de certaines variations dans les règlements affectant la détermination du prix d'une maison et, conséquemment, le niveau d'abordabilité de celle-ci dans les six régions métropolitaines de recensement du Québec. Ils ont également réussi à évaluer les variations et la sensibilité de l'abordabilité résultant des particularités régionales.

NOTE: Also available in English under the title: *Québec Regulations and Affordability Measurements: Single Family Starter Homes in Thirty Cities and Towns of Québec: Report.*

### Ongoing Projects/Projets en cours

#### **A GUIDE TO IMPROVING HOUSING AFFORDABILITY**

##### **Objective:**

The development of a prototype issue of a guide that will enable housing producers and providers to review, examine and assess proven development, design and financing strategies that improve housing affordability with the objective of implementing them.

##### **Division:**

Research Division

##### **Contractor:**

McGill University  
815 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

##### **CIDN:**

0889 0200002

##### **Central Registry:**

6610-9

#### **SHELTER AFFORDABILITY AND HOUSING NEEDS OF CANADIAN FOOD BANK CLIENTS**

##### **Objective:**

Will examine the relationship between food banks and housing, and produce a profile of the typical food bank client in Winnipeg, Manitoba, in regard to shelter needs and other socio-demographic variables.

##### **Division:**

Research Division  
External Research Program

##### **Contractor:**

Professor Jeff Sloan  
Manitoba Nursing Research  
Institute  
Faculty of Nursing  
University of Manitoba  
Winnipeg, Manitoba  
R3T 2N2

##### **CIDN:**

1099 0200001

##### **Central Registry:**

6585-S087

### A COMPARATIVE STUDY OF IMMIGRANT HOUSING IN MONTREAL AND TORONTO

**Objective:**

To address the linkages between housing, neighbourhoods and social networks among visible minority immigrant groups living in metropolitan Montreal and Toronto.

**Division:**

Research Division  
External Research Program

**Contractor:**

Brian K. Ray  
McGill University  
805 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

**CIDN:**

1283 0200001

**Central Registry:**

6585-R069

### IMMIGRANT HOUSING CHOICES, 1991

**Objective:**

To update and extend a recently completed study of immigrant housing choices based on 1986 census data. This study will describe differences between the housing choices of immigrants and non-immigrants in 1991 and compare findings to those of the previous study. 1986 and 1991 census data will be used to trace changes over time in the behaviour of individual immigrant cohorts. Through focus groups and statistical analysis of 1991 census data, the research will attempt to identify factors underlying observed differences between immigrants and non-immigrants.

**Division:**

Research Division

**Contractor:**

Lapointe Consulting Inc.  
311 Markham Street  
Toronto, Ontario  
M6G 2K8

**CIDN:**

0854 0201001  
0854 0200002

**Central Registry:**

6620-24

### SURVEY OF ISSUES AFFECTING RACIAL AND ETHNIC MINORITIES IN THE HOUSING SECTOR

**Objective:**

The purpose of this research is to explore housing issues affecting racial and ethnic minorities and to identify issues, problems, and gaps in housing services available through conducting a survey of government and non-government organizations serving the community. In addition, to promote possibilities for information exchange, information will be compiled for a directory of governmental and non-governmental agencies and organizations working in this area.

**Division:**

Strategic Planning and Policy  
Development Division

**Contractor:**

Ekos Research Associates Inc.  
275 Sparks Street  
Suite 801  
Ottawa, Ontario  
K1R 7X9

**CIDN:**

1067 0100001

**Central Registry:**

6865-10



## Ongoing Projects/Projets en cours

### CANADIAN HOUSING PRODUCTS AND SERVICES FOR CHINA

#### Objective:

To identify potential opportunities for Canadian manufactured products and services for the Beijing housing market.

#### Division:

Housing Innovation Division

#### Contractor:

McGill University  
School of Architecture  
815 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

#### CIDN:

1263 0300001

#### Central Registry:

4380-21

### EXPORT CAPABILITIES AND STRATEGIES OF CANADA'S COMPETITORS IN INTERNATIONAL HOUSING MARKETS

#### Objective:

To examine the housing export capabilities of Canada's principal competitors in international housing markets as well as strategic approaches that these countries use to transact business internationally.

#### Division:

International Relations  
Division

#### Contractor:

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### CIDN:

1369 0900001

#### Central Registry:

4380-24

### EXPORTABLE HOUSE BUILDING AND REHABILITATION TECHNOLOGIES

#### Objective:

To undertake an analysis of the export capabilities of Canada's housing industry as well as the sources of demand for Canadian housing systems, products, services and technologies.

#### Division:

International Relations  
Division

#### Contractor:

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

#### CIDN:

1293 0900006  
1294 0900001

#### Central Registry:

4380-11-3

### INVESTIGATION INTO COMMERCIAL OPPORTUNITIES FOR CANADA'S HOUSING SECTOR IN CENTRAL AND EASTERN EUROPE

#### Objective:

To provide a primer describing the essential features of Central and Eastern European housing markets, identify housing needs, provide guidance on how to strategically approach Central and Eastern European markets, indicate

Canadian and foreign resources that are potentially available to Canadian providers of housing technology.

#### Division:

International Relations  
Division

#### Contractor:

Canadian Urban Institute  
2nd Floor  
West Tower City Hall  
Toronto, Ontario  
M5H 2N1

#### CIDN:

0955 0900002

#### Central Registry:

4380-21/22

### SURVEY OF MAJOR HOUSING EXPORTS

#### Objective:

To carry out a telephone survey and analysis of one hundred of Canada's largest exporters of housing-related systems, products and services.

#### Division:

International Relations  
Division

#### Contractor:

Decima Research  
One Eglinton Avenue East  
Suite 700  
Toronto, Ontario  
M4P 3A1

#### CIDN:

1337 0900001

#### Central Registry:

4380-11-5

### **GUIDE DE DESIGN DES MAISONS DESTINÉES AUX PERSONNES SEULES À FAIBLE REVENU.**

*Préparé par Pierre Teasdale. Préparé pour la Société canadienne d'hypothèques et de logement et le Service de l'habitation et du développement urbain de la Ville de Montréal. Ottawa : SCHL, 1993, i.e. 1994. (Programme de subventions de recherche)*

Les maisons de chambre constituent la forme de logement la moins chère et le mode d'occupation le plus accessible aux personnes seules à faible revenu. Ce guide de design examine les besoins d'un individu dont le logement ne comporte qu'une seule pièce, y compris les maisons de chambre, les logements de type studio et les logements partagés. Le guide est basé sur les résultats de visites détaillées à vingt-cinq maisons dans cinq villes et dans quatre provinces canadiennes. Au cours de ces visites, les responsables et les occupants ont été interrogés dans le but d'identifier les sources des problèmes et de connaître pourquoi certains éléments architecturaux étaient particulièrement appréciés. Des photos étaient prises et le plan d'un étage typique de chacune des maisons était dessiné.

L'auteur considère les besoins individuels et collectifs des résidents et propose une vaste gamme de solutions pour améliorer la qualité des logements de type "chambre". Ces solutions reflètent la nécessité d'améliorer les dimensions et la configuration des espaces résidentiels dans ce type de logement ainsi que le besoin de réaménager les équipements sanitaires, les espaces communs, les équipements de cuisine et les espaces de rangement. Toute amélioration dans la qualité des logements de la catégorie "chambre" proposée par l'auteur vise à limiter l'impact sur les loyers.

NOTE: Also available in English under the title: *House Design Guide for Low-Income Singles.*

### **HOUSE DESIGN GUIDE FOR LOW-INCOME SINGLES.**

*Prepared by Pierre Teasdale. Prepared for Canada Mortgage and Housing Corporation and the Service de l'habitation et du développement urbain, City of Montreal. Ottawa: CMHC, 1993, i.e. 1994. (External Research Program)*

Rooming houses represent the type of housing which is most inexpensive and the type of tenure which is most accessible for low-income singles. This design guide examines the needs of people living in one-room units including single room occupancy hotels, bachelor units and shared units. The guide is based on the results of detailed visits made to twenty-five houses in five cities and four Canadian provinces. During these visits, the staff and residents were interviewed to identify sources of problems and to find out why certain architectural elements were particularly appreciated. Photos were taken and the typical floor plan for each of the houses was sketched.

The author weighs the individual and collective needs of the residents and proposes a wide range of solutions to improve the quality of "rooming house" units. These solutions reflect the necessity of enhancing the dimensions and configurations of the residential spaces in this type of housing as well as the need to redesign the sanitary facilities, community spaces, kitchen facilities and storage areas. All of the improvements in "rooming house" unit quality proposed by the author are designed to minimize the impact on the rents charged.

NOTE : Aussi disponible en français sous le titre : *Guide de design des maisons destinées aux personnes seules à faible revenu.*

### **SPROUT: DESIGNING CAPACITIES FOR INCREMENTAL CHANGE: EXPLORING THE SUPPORT PARADIGM.**

*Prepared by Sevag Pogharian Design. Ottawa: Canada Mortgage and Housing Corporation, 1994. (External Research Program)*

This report presents Sprout - a starter home prototype. The central objectives in developing this prototype are to enhance affordability in terms of down payment and recurring or carrying costs for first-time home-buyers while also meeting their housing needs and expectations. The investigation and proposed design solutions flow from the key themes of participation, flexibility and incrementalism inherent to the support paradigm of housing supply. The design precedents for Sprout comprise Charlie, the Grow Home, as well as Victorian and Georgian townhouses.

Part 1 of this report describes the context and ideas underlying Sprout. Part 2 describes Sprout's attributes and its potential benefits while Part 3 presents plans and elevations of eight variants of this prototype. For each variant of Sprout, the evolution of the unit from its initial period of construction to its point of maximum habitable area is hypothesized. Furthermore, each conversion or expansion of the unit is accompanied by a description of the household's emerging needs that precipitated the modifications as well as cost estimates associated with the modification.

### **Ongoing Projects/Projets en cours**

#### **ALTERNATIVES FOR THE PLANNING AND DESIGN OF HOUSING IN ST. JOHN'S**

##### **Objective:**

To explore alternatives for the planning and design of new low and medium density housing in St. John's, Newfoundland.

##### **Division:**

Research Division  
External Research Program

##### **Contractor:**

Robert Mellin, Architect  
89 Barnes Road  
St. John's, Newfoundland  
A1C 3X5

##### **CIDN:**

1095 0200001

##### **Central Registry:**

6585-M108

#### **4D ENVIRONMENTAL SIMULATION TO EVALUATE DESIGN ALTERNATIVES FOR MEDIUM DENSITY HOUSING**

##### **Objective:**

To generate and evaluate planning and design alternatives using ACV technology - Calgary.

##### **Division:**

Research Division  
External Research Program

##### **Contractor:**

Richard Perron  
Dept. of Landscape  
Architecture  
University of Manitoba  
Winnipeg, Manitoba  
R3T 2N2

##### **CIDN:**

1279 0200001

##### **Central Registry:**

6585-P060

#### **HABITATION ET FLEXIBILITÉ AU CANADA : BILAN 1991**

##### **Objet :**

Construire une grille d'analyse permettant de dresser une typologie des solutions apportées par les architectes; et faire un rapport de synthèse proposant un bilan global des perspectives de résolution du problème de flexibilité dans un projet d'habitation.

##### **Division :**

Division de la recherche  
Programme de subventions de recherche

##### **Contractant :**

Annie Chelin  
5780, rue Hutchison  
Outremont (Québec)  
H2V 4B6

##### **NIC :**

0911 0200001

##### **Numéro de la gestion des documents :**

6565-C058



## **IEA FUTURE BUILDINGS FORUM**

### **Objective:**

To write a report for the IEA Future Buildings forum.

### **Division:**

Research Division

### **Contractor:**

Facing the Future  
15003 - 56th Avenue  
Edmonton, Alberta  
T6H 5B2

### **CIDN:**

1061 0200005

### **Central Registry:**

6713-8

## **PASSIVE SOLAR HOUSE DESIGNS FOR CANADA**

### **Objective:**

To identify relevant literature and design tools, analyze and interpret data in order to update existing monograph on passive solar house designs.

### **Division:**

Research Division

### **Contractor:**

Leslie Jones & Associates Ltd.  
319 Catherine Street  
Ottawa, Ontario  
K1R 5T4

### **CIDN:**

1241 0200001

### **Central Registry:**

6770-10

## **VILLE ST-LAURENT REVISITED: WARTIME HOUSING AND ARCHITECTURAL CHANGE, 1942-92**

### **Objective:**

To study a solution offered by the wartime housing effort and to test its lessons for today's housing problems.

### **Division:**

Research Division  
External Research Program

### **Contractor:**

Dr. Annmarie Adams  
School of Architecture  
McGill University  
815 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

### **CIDN:**

1083 0200001

### **Central Registry:**

6585-A042

## **VIRTUAL REALITY AND ITS POTENTIAL USES IN THE HOUSING SECTOR**

### **Objective:**

To assess potential opportunities to apply virtual reality technology in Canadian urban planning and the housing sector. Particular attention will be given to the potential use of virtual reality in designing sustainable communities and accessible housing for the disabled and seniors. The final report will provide an overview of virtual reality technology and discuss examples of existing applications relevant to housing and urban development.

### **Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments  
Experts in Residence Program

### **Contractor:**

John Thurston  
26 Standford Private  
Ottawa, Ontario  
K1T 3J3

### **CIDN:**

1015 0202003

### **Central Registry:**

6855-5

# HOUSING FORECASTING AND DEMAND PRÉVISION ET DEMANDE DE LOGEMENTS

## Completed Reports/Rapports terminés

### **LES BESOINS IMPÉRIEUX DE LOGEMENT : GUIDE TECHNIQUE SUR LES BASES DE DONNÉES ET LES ESTIMATIONS DE 1991.**

*Ottawa : Division de la recherche, Société canadienne d'hypothèques et de logement, 1994.*

Deux catégories de sources de données peuvent fournir des renseignements complets sur les logements et sur les conditions socio-économiques des ménages, soit les renseignements essentiels pour mesurer les besoins de logement. Ces sources sont le recensement et les enquêtes sur le logement comme la base de microdonnées ERMEM/EFL. Ces sources de données permettent d'obtenir des renseignements complémentaires, chacune d'elles est précieuse.

Ce guide technique décrit et compare les deux sources de données, établit les différences entre les méthodes connexes de calcul des besoins impérieux de logement, et met en évidence les forces et les faiblesses des deux séries résultantes d'estimations de besoins de logement pour 1991. Il y a dans le guide un tableau récapitulatif qui montre les cinq principales différences entre la mesure des besoins impérieux de logement par le recensement et les ERMEM/EFL, 1991.

NOTE: Also available in English under the title: *Technical Guide to Understanding 1991 Core Housing Need Data Bases and Estimates.*

### **TECHNICAL GUIDE TO UNDERSTANDING 1991 CORE HOUSING NEED DATA BASES AND ESTIMATES.**

*Ottawa: Research Division, Canada Mortgage and Housing Corporation, 1994.*

There are two types of data sources that provide both the comprehensive dwelling unit and household socio-economic information required to measure housing need. They are: housing-specific surveys such as the HIFE/SCS micro-data base; and the census. Each data source is invaluable in its own right and each source complements the other in the information it provides.

This technical guide describes and compares both data sources, differentiates between the associated methods of calculating core housing need, and highlights the strengths and weaknesses of the two resultant series of housing needs estimates for 1991. A summary table showing the five key differences between the census and HIFE/SCS measurement of core housing need (1991) is included in the guide.

NOTE : Aussi disponible en français sous le titre : *Les besoins impérieux de logement : guide technique sur les bases de données et les estimations de 1991.*

**CHILD NOMADS: SHARED  
PARENTING AND DUAL  
RESIDENCE**

**Objective:**

Through a literature review and a survey of families, this study will examine the overall magnitude and possible longer term implications of joint custody agreements for housing demand and the use and design of dwellings.

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments  
Experts in Residence Program

**Contractor:**

Mr. Martin Wexler  
45, rue Chesterfield  
Westmount, Quebec  
H3Y 2M4

**CIDN:**

1015 0201001

**Central Registry:**

6855-5

**PHD MODEL - NON-FAMILY  
BREAKDOWN**

**Objective:**

To modify the software for the potential housing demand (PHD) projection model to allow for disaggregation of non-family households into component household types and implementation of other desirable enhancements.

**Division:**

Research Division

**Contractor:**

Tetrad Computer Applications  
Limited  
1445 West Georgia Street  
Vancouver, British Columbia  
V6G 2T3

**CIDN:**

1344 0200001

**Central Registry:**

6620-10



## Ongoing Projects/Projets en cours

### DEMOGRAPHIC CHANGE AND THE HOUSING MARKET IN CANADA

#### Objective:

To deepen our understanding of demographic effects on housing markets and to identify future policy problems that might emerge in the ownership and rental markets.

#### Division:

Research Division  
External Research Program

#### Contractor:

Mr. Arthur Hosios  
University of Toronto  
Institute for Policy Analysis  
707 - 140 St. George Street  
Toronto, Ontario  
M5S 1A1

#### CIDN:

1091 0200001

#### Central Registry:

6585-H055-1

### ÉVOLUTION DE LA DEMANDE DE LOGEMENT ET STABILITÉ DES PRIX IMPLICITES DES ATTRIBUTS RÉSIDENTIELS; UNE COMPARAISON 1986-1991

#### Objet :

La recherche consiste à étudier les modifications survenues entre 1986 et 1991 dans la structure de la demande de logement des ménages de la région de

Québec. Le modèle hédonique «RÉSIVALU», mis au point il y a quelques années, a permis de tracer un portrait détaillé des préférences des ménages en matière de logement pour la période 1986-1987, et ce pour l'ensemble des sous-marchés de propriétaires-occupants sur le territoire de la Communauté urbaine de Québec (CUQ). Cette étude aura recours à un système d'information géographique en voie d'élaboration pour le territoire de la CUQ qui s'intégrera au modèle hédonique RÉSIVALU à régression multiple. Elle comparera la carte des préférences des ménages de 1986 à celle de 1991 et examinera les changements qui ont marqué les prix implicites des attributs des prix des maisons. L'étude permettra en outre de mesurer les déplacements fiscaux entre municipalités de la CUQ, les modifications des structures socio-économiques ainsi que l'étalement urbain.

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

François Desrosiers  
Professeur titulaire  
Université Laval  
Faculté des sciences de  
l'administration  
Sainte-Foy (Québec)  
G1K 7P4

#### NIC :

1275 0200001

#### Numéro de la gestion des documents :

6585-D033-5

### MATCHING BUYERS AND SELLERS IN THE RESALE HOUSING MARKET

#### Objective:

Matching buyers and sellers in the resale housing market.

#### Division:

Research Division  
External Research Program

#### Contractor:

Mr. Christopher T. Ragan  
Department of Economics  
McGill University  
855 Sherbrooke Street West  
Montreal, Quebec  
H3A 2T7

#### CIDN:

1098 0200001

#### Central Registry:

6585-R065

# HOUSING RESEARCH/RECHERCHE EN LOGEMENT

## Ongoing Projects/Projets en cours

### DEVELOP AN INVENTORY OF RESEARCH AND INFORMATION PRODUCTS OF MEMBERS OF THE NATIONAL HOUSING RESEARCH COMMITTEE

#### Objective:

To develop a computerized inventory of research and information products of members of the National Housing Research Committee.

#### Division:

Research Division

#### Contractor:

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### CIDN:

1238 0200001  
1238 0201001

#### Central Registry:

0190-78-10

## Ongoing Projects/Projets en cours

### ASSESSMENT OF THE CONDITION OF MUNICIPAL INFRASTRUCTURE

**Objective:**

To assess the condition of municipal infrastructure at the national level.

**Division:**

Research Division

**Contractor:**

National Research Council of  
Canada  
Institute for Research in  
Construction  
1200 Montreal Road  
Ottawa, Ontario  
K1A 0R6

**CIDN:**

1357 0200001

**Central Registry:**

6600-38

### INFRASTRUCTURE COSTS ASSOCIATED WITH CONVENTIONAL AND ALTERNATIVE DEVELOPMENT PATTERNS

**Objective:**

To carry out the study entitled: "Infrastructure Costs Associated with Conventional and Alternative Development Patterns".

**Division:**

Research Division

**Contractor:**

Essiambre Phillips Desjardins  
1900 City Park Drive  
Suite 206  
Gloucester, Ontario  
K1J 1A3

**CIDN:**

1193 0200001

**Central Registry:**

6665-21

### INNOVATIVE INFRASTRUCTURE: MUNICIPAL EXPERIENCES

**Objective:**

To present a very brief historical outline of the evolution of the design of the dominant Canadian municipal infrastructure systems and materials, to provide an examination of the technical causes for a range of failures in some of these systems; to place into context an identification of technologies to repair these failing systems; and to carry out a survey to identify durable repair technologies and to provide case studies on a number of examples which have been locally acceptable and affordable.

**Division:**

Research Division

**Contractor:**

REIC Ltd.  
15010 Yonge Street  
Aurora, Ontario  
L4G 1M6

**CIDN:**

1219 0200001

**Central Registry:**

6715-8

### PUBLIC-PRIVATE PARTNERSHIPS IN URBAN INFRASTRUCTURE

**Objective:**

This study will document some innovative experiences of private sector involvement in urban infrastructure delivery and financing and assess its impact on costs for the infrastructure service, the quantity and quality of the service, on housing

affordability and on the housing sector at large including the impacts on developers, new home buyers and existing homeowners.

**Division:**

Research Division

**Contractor:**

IBI Group  
230 Richmond Street West  
5th Floor  
Toronto, Ontario  
M5W 1V6

**CIDN:**

1358 0200001

**Central Registry:**

6600-28

### A STUDY ON ISSUES RELATED TO THE DISSEMINATION OF INFORMATION ON MUNICIPAL INFRASTRUCTURE

**Objective:**

To study issues related to the dissemination of information on municipal infrastructure and assess the appropriateness of various mechanisms aimed at facilitating the dissemination of information.

**Division:**

Research Division

**Contractor:**

REIC Ltd.  
15010 Yonge Street  
Aurora, Ontario  
L4G 1M6

**CIDN:**

1396 0200001

**Central Registry:**

6503-93

## Ongoing Projects/Projets en cours

### DEVELOPMENT OF COMMERCIALLY VIABLE CONCEPTS AND A DESIGN FOR A RESIDENTIAL FRAMING SYSTEM FOR A MONOCOQUE HOUSE

#### Objective:

The development of commercially viable engineered structural concepts and a design for a monocoque framing system for residential structures which can be adopted by home builders for the construction of houses on unstable soils; monitoring of the demonstration of the system in a house construction project and a report of the results of the work for CMHC.

#### Division:

Housing Innovation Division

#### Contractor:

Gower, Yeung & Associates  
Ltd.  
615 Eighth Street  
Suite 201  
New Westminster, British  
Columbia  
V3M 3S3

#### CIDN:

0657 0300001

#### Central Registry:

6796-4

### MONOCOQUE CAVITY RIGID PANEL FOR WALL AND ROOF CONSTRUCTION

#### Objective:

To finalize the design of monocoque wall and roof panels and the locking joint assemblies for these panels, and produce prototype wall and roof panels for testing.

#### Division:

Research Division  
Housing Technology  
Incentives Program

#### Contractor:

Ray-Co-Tech Inc.  
30, rue Des Frenes  
Bromont (Québec)  
J0E 1L0

#### CIDN:

1270 0200001

#### Central Registry:

6521-27/93



## LEAD/PLOMB

### Ongoing Projects/Projets en cours

#### **PROJECT EVALUATION OF CLEAN-UP OF LEAD DUST IN RENOVATED HOUSES**

##### **Objective:**

To evaluate different techniques to clean-up leaded dust created by renovation activity.

##### **Division:**

Research Division

##### **Contractor:**

Pinchin Environmental  
Consultants  
5749 Coopers Avenue  
Mississauga, Ontario  
L4Z 1R9

##### **CIDN:**

1173 0200002

##### **Central Registry:**

6790-12

### REVIEW AND MARKET NEEDS EVALUATION FOR THE CMHC LIFE-CYCLE COSTING SOFTWARE.

*Prepared by Richard Kadulski. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

Changes in the regulatory environment mean that higher energy standards are being mandated, but there are concerns that construction upgrades should be cost effective. Accordingly, software that can provide the energy performance and costing information at the same time is very attractive. Canada Mortgage and Housing Corporation (CMHC) has developed a life-cycle costing (LCC) software that has the potential to be a tool to address these concerns. This study was undertaken to perform a critical review of the software, and to perform a market survey to identify the commercial opportunities for the LCC software.

Since there are a number of technical problems with the current version of the LCC software, the author suggests that it is premature at this stage to discuss marketing options and strategies. He is also of the opinion that the window of opportunity for this type of software may have already passed. However, if CMHC is interested in pursuing the development of LCC software, it may be more useful to investigate taking some components, such as the code comparisons or costing elements, and tying them to existing software such as HOT-2000.

### Ongoing Projects/Projets en cours

#### ASSESSMENT OF THE CAPACITY TO USE STOCHASTIC MODELS IN BUILDING LIFE-CYCLE COSTING

##### Objective:

The study is an evaluation of how well easily collected, financial data reported on audited statements and supporting documentation about housing that is targeted towards low and moderate income households can be used in conjunction with well known probabilistic models to estimate long term maintenance, repair and replacement costs.

##### Division:

Research Division  
External Research Program

##### Contractor:

Aron Spector  
Ark Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

##### CIDN:

1 100 0200001

##### Central Registry:

6585-S008-7

### Ongoing Projects/Projets en cours

#### **A LITERATURE AND CODE REVIEW ON DAYLIGHTING IN HOUSING**

**Objective:**

To review the literature and the National Building Code of Canada on the treatment of daylighting as a factor in planning and design of housing in northern latitude countries.

**Division:**

Research Division

**Contractor:**

James Love Consultants  
1737 2nd Avenue N.W.  
Calgary, Alberta  
T2N 0G3

**CIDN:**

1214 1100003

**Central Registry:**

6717-18

#### **REVIEW OF LIGHTING AND HUMAN HEALTH**

**Objective:**

To review the biological effects of light (from the ultraviolet to the infrared) with emphasis on the effects (biochemical, physiological, etc.) on human health.

**Division:**

Research Division

**Contractor:**

Dr. Benjamin Rusak &  
Associates  
1976 Beech Street  
Halifax, Nova Scotia  
B3H 4B8

**CIDN:**

1214 1100001

**Central Registry:**

6717-18

### CONSTRUCTION INDUSTRIALISÉE DES MAISONS EN RANGÉE AU MOYEN DE PANNEAUX MURAUX.

*Étude réalisée par Avi Friedman et Vince Cammalleri. Ottawa : Société canadienne d'hypothèques et de logement; Québec : Société d'habitation du Québec, 1994.*

Cette étude a pour but d'examiner la manière dont la Maison évolutive peut être adaptée à une méthode de production industrialisée au moyen de panneaux préfabriqués, ainsi que d'en établir les répercussions sur les plans de la qualité, de l'économie et de la performance technique. Après avoir sondé 109 fabricants, neuf types de panneaux muraux ont été retenus aux fins de l'évaluation. D'après les résultats, tous les types de panneaux préfabriqués sont d'une qualité supérieure à celle de la construction traditionnelle, surtout en ce qui a trait à l'efficacité énergétique et à la qualité d'exécution. Les seuls inconvénients que présente l'emploi de panneaux préfabriqués tiennent à leur maniabilité relativement aux méthodes de construction traditionnelles, particulièrement s'il faut apporter des modifications sur place, et au fait qu'ils perturbent le cours normal des travaux de construction.

Un cadre propre à la construction industrialisée de la Maison évolutive a été élaboré par l'adaptation du plan de l'habitation dans le but de procurer une marge de manoeuvre suffisante au constructeur et des économies d'échelle au fabricant. Les critères de conception architecturale, modulaire et technique ont été établis à partir des vues exprimées par les fabricants, constructeurs et occupants des ensembles résidentiels évolutifs. Une vaste gamme de plans schématiques ont été dessinés pour l'habitation, comportant un nombre limité de composants simples et courants. En tout, neuf configurations de panneaux ont été proposés, six pour les élévations des façades avant et arrière, et trois pour les murs latéraux des dernières maisons de la rangée. Grâce à l'emploi de cloisons de petite dimension et d'usage courant, il a été possible d'obtenir différentes configurations pour les entrées et les salles de bains, de même que d'apporter sur place et sans trop de difficultés les modifications demandées par le client.

Pour déterminer dans quelle mesure les panneaux préfabriqués étaient susceptibles de réduire le prix de revient de la construction, nous avons examiné les prix de plusieurs composants préfabriqués, dont les murs extérieurs, les planchers, les cloisons et les murs de séparation. L'analyse a révélé que les panneaux préfabriqués peuvent effectivement concurrencer, pour la plupart, les méthodes traditionnelles. Toutefois, l'ampleur des économies peut varier considérablement selon le type des panneaux, le degré de préfabrication et le composant en question. On a constaté qu'en incluant les planchers et les cloisons dans les composants préfabriqués il est possible de réaliser des économies appréciables (jusqu'à concurrence de 6 %). Pour la construction de 30 logements ou plus, les économies s'élèveraient jusqu'à 95 000 \$ (3 150 \$ l'unité).

NOTE: Also available in English under the title: *Industrialization of Narrow-Front Rowhousing Using Wall Panel Systems.*



## INDUSTRIALIZATION OF NARROW-FRONT ROWHOUSING USING WALL PANEL SYSTEMS.

*Prepared by Avi Friedman and Vince Cammalleri. Ottawa: Canada Mortgage and Housing Corporation; Québec: Société d'habitation du Québec, 1994.*

The purpose of this study was to examine how the Grow Home could be adapted to an industrialized method of production using prefabricated panel systems, and to determine what implications this would have in terms of quality, economy and technical performance. Following a survey of 109 manufacturers, 9 types of panel systems were selected for evaluation. The results indicated that all types of prefabricated panels could provide a level of quality which is superior to that of conventional construction, particularly in the area of energy efficiency and craftsmanship. The only drawbacks to the use of prefabricated panel systems were found in their flexibility relative to conventional construction, particularly for on-site modifications, and in their disruption of the builders' traditional operational routines.

A framework for the industrialization of the Grow Home was developed by adapting the unit's design to provide sufficient flexibility for the builder and economies of scale for the manufacturer. Architectural, modular and technical design criteria were established based on feedback from manufacturers, builders, and occupants of existing Grow Home projects. A wide range of options for the dwelling's layout was generated using a small number of simple, standard components. Nine panel configurations were proposed in all, six for the front and back elevations and three for the side walls of the end units. The use of small, standard interior partitions provided various configurations for entrances and bathrooms, while enabling changes to be made fairly easily on site in response to a client's request.

The potential for prefabricated systems to reduce construction costs was addressed by examining the costs of several prefabricated components, including exterior walls, floors, partitions and dividing walls. The analysis demonstrated that prefabricated panel systems can, for the most part, provide a competitive alternative to conventional construction. The magnitude of the savings, however, can vary significantly depending on the type of panel system, the degree of prefabrication and the component in question. By extending the scope of prefabricated components to include floors and partitions, it was found that substantial savings (up to 6%) were possible. For the construction of 30 or more units, this represents savings of up to \$95,000 (\$3,150 per unit).

NOTE : Aussi disponible en français sous le titre : *Construction industrialisée des maisons en rangée au moyen de panneaux muraux.*

## Ongoing Projects/Projets en cours

### A STRUCTURAL ANALYSIS OF THE CANADIAN AND INTERNATIONAL MANUFACTURED HOUSING INDUSTRY

#### Objective:

To enhance the international competitiveness of the Canadian Manufactured Housing Industry.

#### Division:

Research Division

#### Contractor:

Canadian Manufactured  
Housing Association  
150 Laurier Avenue West  
Suite 200  
Ottawa, Ontario  
K1P 5J4

#### CIDN:

1290 0200001

#### Central Registry:

0190-78-10

#### **L'HUMIDITÉ DANS LES HABITATIONS DE LA RÉGION DE L'ATLANTIQUE (LNH 6780).**

*Rédigé par Joseph Waugh, Richard Lind et Thomas Landry. Ottawa : Société canadienne d'hypothèques et de logement, 1994. \*\*Prix: 15,00 \$.*

Des recherches effectuées dans les provinces de l'Atlantique entre 1982 et 1991 ont montré que cette région du Canada a des problèmes particulièrement graves et persistants liés à l'humidité dans les habitations. Il a été prouvé qu'une grande partie du bois de charpente utilisé dans la région a une teneur en humidité bien supérieure au niveau de 19 p. 100 prescrit dans le Code national du bâtiment (CNB). Le climat frais et humide dominant peut aussi nuire à l'assèchement du bois de charpente pendant et après la construction.

À l'heure actuelle, on sa penche et entreprend de nouvelles recherches sur plusieurs sujets ayant trait aux moyens de lutter contre l'humidité : l'utilisation d'un écran pare-pluie intégré dans le parement extérieur de l'immeuble et situé derrière le bardage; l'installation d'un pare-air à l'extérieur et à l'intérieur; et la division des vides sanitaires en deux types distincts, soit ceux qui sont chauffés et ceux qui ne le sont pas, avec exigences différentes visant l'élimination de l'humidité, l'isolation et la ventilation.

Les pratiques de construction varient d'une région à l'autre et même à l'intérieur de la région de l'Atlantique. Les pratiques présentées dans ce manuel sont recommandées parce qu'il a été prouvé qu'elles sont des solutions pratiques pour éviter les problèmes d'humidité. Les recommandations tiennent compte aussi des types de matériaux de construction qu'on utilise le plus souvent dans la région ainsi que des pratiques de construction qu'on y trouve actuellement.

NOTE: Also available in English under the title: *Moisture in Atlantic Housing (NHA 6779).*

#### **MOISTURE IN ATLANTIC HOUSING (NHA 6779).**

*Prepared by Joseph Waugh, Richard Lind and Thomas Landry. Ottawa: Canada Mortgage and Housing Corporation, 1994. \*\*Price: \$15.00.*

Research carried out in Atlantic Canada from 1982 to 1991 has shown that Atlantic Canada has particularly severe and persistent problems with moisture in housing. Much of the construction lumber used in the region has been shown to have a moisture content well above the 19 percent moisture content level required by the National Building Code (NBC). The prevailing cool and moist climate can also interfere with the on-site and post-construction drying of construction lumber.

At present new research and attention are being focused on several topics related to moisture control: the use of a rain screen built into and located behind the exterior cladding of the building; the installation of both an exterior and an interior air barrier; and the division of crawl spaces into two distinct types - heated and unheated - with differing requirements for moisture control, insulation and ventilation.

Construction practices vary from region to region and even within the Atlantic Region. The practices recommended in this manual are presented because they have been found to be workable solutions to avoid moisture problems. The recommendations have also been influenced by the type of building materials most commonly used in the region and by current regional construction practices.

NOTE : Aussi disponible en français sous le titre : *L'Humidité dans les habitations de la région de l'Atlantique (LNH 6780).*

## Ongoing Projects/Projets en cours

### ENHANCE THE EMPTIED COMPUTER PROGRAM AND DEVELOP A MANUAL

**Objective:**

To develop a tutorial manual on the EMPTIED computer program that will describe the method of calculation and provide illustrative examples of the application of the EMPTIED program in predicting moisture accumulation in walls and condensation on windows. Guidelines for considering the effects of solar radiation and frost action will be included.

**Division:**

Housing Innovation Division

**Contractor:**

Handegord and Company  
Limited  
185 Strathcona Road S.W.  
Calgary, Alberta  
T3H 1X9

**CIDN:**

1107 0300001  
1107 0301001

**Central Registry:**

6793-24-4

### PROTECTING GYPSUM SHEATHING IN INSULATED STEEL-STUD WALLS

**Objective:**

To determine which types of wall arrangements perform the best with respect to moisture control under similar boundary conditions.

**Division:**

Research Division  
External Research Program

**Contractor:**

Dr. Kim Pressnail  
Assistant Professor  
Dept. of Civil Engineering  
University of Toronto  
35 St. George Street  
Toronto, Ontario  
M5S 1A4

**CIDN:**

1282 0200001

**Central Registry:**

6585-P062

### WIND TUNNEL EXPERIMENTS SIMULATING WIND DRIVEN RAIN

**Objective:**

Study the density of rain impact for three common building shapes and with three architectural features that are designed to minimize rain impact on the buildings.

**Division:**

Housing Innovation Division

**Contractor:**

The Boundary Layer Wind  
Tunnel Laboratory  
University of Western Ontario  
Room 271  
Stevenson Lawson Building  
London, Ontario  
N6A 5B8

**CIDN:**

1123 0304001  
1123 0300001

**Central Registry:**

6793-21-3

# MORTGAGES AND HOUSING FINANCE HYPOTHÈQUES ET LOGEMENT – FINANCES

## Ongoing Projects/Projets en cours

### FEASIBILITY STUDY ON METHODOLOGY FOR MEASURING DISCRIMINATION IN RESIDENTIAL MORTGAGE LENDING

#### Objective:

To identify alternative approaches to measuring discrimination in residential mortgage lending, and determine the feasibility of these different methods. Each option must be distinct from the others and be practicably feasible against the backdrop of the critical success factors within the Canadian context. The report will make a recommendation to CMHC providing a detailed action plan for implementing the recommended approach.

#### Division:

Strategic Planning and Policy  
Development Division

#### Contractor:

Prairie Research Associates  
Inc.  
111 Pulford Street  
Winnipeg, Manitoba  
R3L 0E4

#### CIDN:

1352 0100001

#### Central Registry:

6865-15

### MODEL AND FORECAST RESIDENTIAL MORTGAGE CLAIMS

#### Objective:

To model and forecast residential mortgage insurance claims on existing single family homes.

#### Division:

Market Analysis Centre

#### Contractor:

Park Econometrics Inc.  
165 Bourbon Street  
Ottawa, Ontario  
K1V 9J8

#### CIDN:

1300 1000003

#### Central Registry:

6905-5-1



# MUNICIPAL GOVERNMENT AND FINANCE ADMINISTRATION MUNICIPALE ET FINANCES

## Ongoing Projects/Projets en cours

### **HANDBOOK ON MUNICIPAL ENVIRONMENTAL PRICING**

#### **Objective:**

To produce the ICLEI handbook on municipal environmental pricing which will provide a blueprint for reforming municipal economic instruments.

#### **Division:**

International Relations  
Division

#### **Contractor:**

International Council for  
Local Environmental  
Initiatives  
City Hall, East Tower  
8th Floor  
Toronto, Ontario  
M5H 2N2

#### **CIDN:**

1252 0900001

#### **Central Registry:**

4350-15

### ABORIGINAL HOUSING NEEDS

#### Objective:

To provide a profile of the housing characteristics and needs of aboriginal peoples using data from the 1991 Census and post-censal Aboriginal Peoples Survey (APS).

#### Division:

Research Division

#### Contractor:

ARK Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

#### CIDN:

1045 0201002

#### Central Registry:

6620-2

### ANALYSIS OF MIGRATION AND RESIDENTIAL MOBILITY PATTERNS AMONG CANADA'S ABORIGINAL POPULATION

#### Objective:

To undertake a study examining both the migration and mobility patterns among aboriginal groups. The study will explore the relationship with the urbanization and housing conditions of the aboriginal population.

#### Division:

Research Division  
Centre for Future Studies in Housing and Living Environments

#### Contractor:

Royal Commission on Aboriginal Peoples  
427 Laurier Avenue, 6th Floor  
P.O. Box 1993, Station "B"  
Ottawa, Ontario  
K1P 1B2

#### CIDN:

1171 0200001

#### Central Registry:

6855-26

### ASSESSMENT OF REQUIREMENTS TO ESTABLISH FIRST NATIONS BUILDING INSPECTION UNITS

#### Objective:

Determine the financial and human resources needed to establish a system of First Nations housing inspection units across Canada, and identify the legal, regulatory, or other barriers that must be addressed if the system is to be put in place.

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

Assembly of First Nations Housing Programs  
55 Murray Street, 5th Floor  
Ottawa, Ontario  
K1N 5M3

#### CIDN:

1159 0100001

#### Central Registry:

4044-2

### THE HOUSING CRISIS IN CANADA'S INUIT COMMUNITIES

#### Objective:

To conduct research on housing issues relevant to Inuit people.

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

Inuit Tapirisat of Canada  
Suite 510  
170 Laurier Avenue West  
Ottawa, Ontario  
K1P 5V5

#### CIDN:

1196 0100001

#### Central Registry:

4044-2

### HOUSING FOR THE MÉTIS PEOPLE: A NATIONAL STUDY ON THE STATE OF MÉTIS HOUSING

#### Objective:

Examine the state of housing for Métis people in the Métis homeland.

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

Métis National Council  
558 Whitewood Crescent  
Saskatoon, Saskatchewan  
S7J 4L1

#### CIDN:

1158 0100001

#### Central Registry:

4044-2

### **INCREASING SELF-SUFFICIENCY: NEW FINANCING AND INVESTMENT OPPORTUNITIES FOR URBAN AND RURAL NATIVE HOUSING AUTHORITIES**

#### **Objective:**

Conduct research on options for new directions in Aboriginal housing, and to increase the self-sufficiency of native housing authorities through new financing and investment opportunities.

#### **Division:**

Strategic Planning and Policy  
Development Division

#### **Contractor:**

Native Council of Canada  
384 Bank Street, 2nd Floor  
Ottawa, Ontario  
K2P 1V4

#### **CIDN:**

1203 0100001

#### **Central Registry:**

4044-2

### **INUIT WOMEN AND HOUSING ISSUES**

#### **Objective:**

To conduct research on housing issues relevant to Inuit women. The results of this research will be translated into Inuktitut, published and distributed throughout the North as a means of promoting public awareness and discussion of the issues.

#### **Division:**

Strategic Planning and Policy  
Development Division

#### **Contractor:**

Pauktuutit - Inuit Women's  
Association  
200 Elgin Street  
Suite 804  
Ottawa, Ontario  
K2P 1L5

#### **CIDN:**

1180 0100001

#### **Central Registry:**

4044-2

### **SECOND STAGE HOUSING FOR ABORIGINAL WOMEN AND FRAMEWORK TO MEASURE THE IMPACT OF HOUSING CONDITIONS ON WELL-BEING OF ABORIGINAL WOMEN AND THEIR CHILDREN**

#### **Objective:**

This two-part project has the following objectives:

- (a) Establish the need for "second-stage" housing for Aboriginal women (and their children) and develop a transferable community-based model for use across Canada.

- (b) Develop a framework to measure the impact of housing conditions on the well-being of Aboriginal women and their children (i.e., health, social impacts including family violence and sexual abuse, self-esteem, etc.).

#### **Division:**

Strategic Planning and Policy  
Development Division

#### **Contractor:**

Native Women's Association of  
Canada  
9 Melrose Avenue  
Ottawa, Ontario  
K1N 5P3

#### **CIDN:**

1152 0100001

#### **Central Registry:**

4044-2

#### **FEASIBILITY STUDY AND BLUEPRINT FOR THE REDEVELOPMENT OF THE CMHC BUILDERS AND RENOVATORS WORKSHOPS TRAINING MATERIAL FOR NORTHERN BUILDERS AND RENOVATORS**

##### **Objective:**

To identify the training and development needs, options and training priorities of northern builders and renovators and to create a detailed report that will serve as the blueprint for the redevelopment of the existing CMHC builders and renovators series of workshop materials to suit the needs of northern builders and renovators.

##### **Division:**

Housing Innovation Division

##### **Contractor:**

Drerup-Armstrong Limited  
P.O. Box 130  
Carp, Ontario  
K0A 1L0

##### **CIDN:**

1378 0300001

##### **Central Registry:**

6504-1

#### **FROSTLINE - 2ND EDITION**

##### **Objective:**

To provide editorial content for the second edition of Frostline, the North Committee newsletter.

##### **Division:**

Housing Innovation Division

##### **Contractor:**

Drerup-Armstrong Limited  
P.O. Box 130  
Carp, Ontario  
K0E 1L0

##### **CIDN:**

1371 0300001

##### **Central Registry:**

0345-74

#### **NORTH FILE FACT SHEETS**

##### **Objective:**

To produce fact sheets on northern building technology camera-ready for production.

##### **Division:**

Housing Innovation Division

##### **Contractor:**

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

##### **CIDN:**

0515 0300002

##### **Central Registry:**

6796-4-1



## PARKING GARAGES/SILOS À VOITURE

### Ongoing Projects/Projets en cours

#### **VALIDATION OF THE REFLECTOMETRIC IMPULSE MEASUREMENT OF TECHNOLOGY (RIMT)**

##### **Objective:**

To assist CMHC in the validation of the reflectometric impulse measurement technology (RIMT) by evaluating the results of the work and providing a review of the final report.

##### **Division:**

Research Division

##### **Contractor:**

Dr. G.G. Litvan  
248 Range Road  
Ottawa, Ontario  
K1N 8J8

##### **CIDN:**

0933 0200003

##### **Central Registry:**

6711-8

#### **VERIFICATION OF RIMT EQUIPMENT**

##### **Objective:**

To assist J.A. Bickley Associates in the development of a research plan for the validation of RIMT technologies.

##### **Division:**

Research Division

##### **Contractor:**

Cordec International Inc.  
1390 Prince of Wales Drive  
Suite 103  
Ottawa, Ontario  
K2C 3N6

##### **CIDN:**

0933 0200002

##### **Central Registry:**

6711-8

### Ongoing Projects/Projets en cours

#### UPDATING OF PLAYGROUND PUBLICATIONS AND SLIDE PRESENTATIONS FROM CHILDREN'S ENVIRONMENTS ADVISORY SERVICE

##### Objective:

Updating of playground publications and slides, with revisions in the areas of design, pictures, concepts and overall content to reflect changes in playground design standards and include greater emphasis on barrier-free design and injury prevention.

##### Division:

Housing Innovation Division

##### Contractor:

Betty Dion Enterprises Ltd.  
458 Melbourne Avenue  
Ottawa, Ontario  
K2A 1W3

##### CIDN:

1114 0300001

##### Central Registry:

6545-6

## RENTAL HOUSING/LOGEMENT LOCATIF

### Ongoing Projects/Projets en cours

#### **IMPACT D'UN PROGRAMME PARAMUNICIPAL SUR LE MARCHÉ DU LOGEMENT LOCATIF**

##### **Objet :**

Déterminer si l'intervention  
PALL a eu des impacts sur le  
marché locatif avoisinant.

##### **Division :**

Division de la recherche  
Programme de subventions de  
recherche

##### **Contractant :**

Luba Serge  
29 rue Easton  
Montréal (Québec)  
H4X 1K9

##### **NIC :**

1287 0200001

##### **Numéro de la gestion des documents :**

6585-S084-1

#### **VERIFICATION OF THE RENTAL MARKET UNIVERSE IN CALGARY, LETHBRIDGE, MEDICINE HAT AND BROOKS**

##### **Objective:**

To carry out the verification of  
the rental market universe in  
Calgary, Lethbridge, Medicine  
Hat, and Brooks, and to  
provide a study of the Calgary  
condominium market.

##### **Division:**

Research Division

##### **Contractor:**

Katarina Durech  
208, 2130 17 Street South  
West  
Calgary, Alberta  
T2T 4M4

##### **CIDN:**

1296 0400006

##### **Central Registry:**

7100-1

## Ongoing Projects/Projets en cours

### ALTERNATIVE PLANNING APPROACHES

**Objective:**

Prepare a research report entitled "Alternative Planning Approaches" which will review alternative approaches to community planning and design, such as "Neo-Traditional Designs", "Pedestrian Pockets", "Cohousing Communities" and "Eco-Villages".

**Division:**

Research Division

**Contractor:**

Hygeia Consulting Services  
430 Elm Road  
Toronto, Ontario  
M5W 3W7

**CIDN:**

1192 0200001

**Central Registry:**

6665-22

### THE EXTERNALITIES OF RESIDENTIAL DEVELOPMENT

**Objective:**

Prepare an authoritative paper entitled "The Externalities of Residential Development". The paper shall examine several common housing-related externalities in order to foster a more comprehensive understanding of some of the direct and indirect social, economic and environmental costs/impacts associated with our houses and our communities.

**Division:**

Research Division

**Contractor:**

Sheltair Scientific Limited  
2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

**CIDN:**

0982 0200001

**Central Registry:**

6665-16

### SUMMARY REPORT ON HOUSING THE NEW FAMILY

**Objective:**

To produce a document that communicates the key findings of a larger research report on new housing alternatives for non-conventional families, as part of the International Year of the Family 1994.

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

**Contractor:**

Laura Johnson  
374 Sackville Street  
Toronto, Ontario  
M4X 1S5

**CIDN:**

1015 0202002

**Central Registry:**

6855-5



## Ongoing Projects/Projets en cours

### CANADA POST MOVER INFORMATION

**Objective:**

A research study to make improvements in the timeliness and scope of information on migration flows and mover characteristics.

**Division:**

Market Analysis Centre

**Contractor:**

Canada Post Corporation  
2701 Riverside Drive  
Suite NO175  
Ottawa, Ontario  
K1A 0B1

**CIDN:**

1009 1000001

**Central Registry:**

6905-11

### FACTORS INFLUENCING RESIDENTIAL MOBILITY AMONG FAMILIES WITH CHILDREN LIVING IN A LOW-INCOME AREA IN WINNIPEG, MANITOBA

**Objective:**

To understand how low-income families with school-aged children perceive their residential mobility, its causes and consequences.

**Division:**

Research Division  
External Research Program

**Contractor:**

Dr. Nancy C. Higgitt  
Department of Family Studies  
University of Manitoba  
Winnipeg, Manitoba  
R3T 2N2

**CIDN:**

1090 0200001

**Central Registry:**

6585-H061-2

# RESIDENTIAL REHABILITATION RÉNOVATION DE LOGEMENTS

## Completed Reports/Rapports terminés

### **CONSUMER RENOVATION INFORMATION GUIDE = GUIDE DE LA RÉNOVATION À L'INTENTION DU CONSOMMATEUR (NHA/LNH 6369).**

*Renovation, no. 7. Revised edition. Ottawa: Canada Mortgage and Housing Corporation, 1994.*

The CMHC Consumer Renovation Information Guide provides a list of publications of federal and provincial agencies and associations, public utilities and municipalities which have produced information products on renovation topics for consumers. The entries listed are categorized by Federal Agencies, National Associations, and Provincial and Municipal Agencies and Associations in geographical order by province and then alphabetical order by publisher.

NOTE: *Bilingual/bilingue.*

### **GUIDE DE LA RÉNOVATION À L'INTENTION DU CONSOMMATEUR = CONSUMER RENOVATION INFORMATION GUIDE (LNH/NHA 6369).**

*Rénovation, no.7. Édition révisée. Ottawa : Société canadienne d'hypothèques et de logement, 1994.*

Le Guide de la rénovation à l'intention du consommateur, publié par la SCHL, fournit une liste des publications d'associations et d'organismes fédéraux et provinciaux qui ont produit des documents d'information sur la rénovation. Les entrées figurant dans la liste sont classées par organismes fédéraux, associations nationales; associations et organismes provinciaux et municipaux, par ordre géographique selon la province puis par ordre alphabétique selon l'éditeur.

NOTE: *Bilingue/bilingual.*

### **LE MARCHÉ DE LA RÉNOVATION ET SA CLIENTÈLE.**

*Préparé par David Foster, Energy Pathways Inc. Préparé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994.*

L'objectif de ce projet de recherche était de mieux comprendre la façon dont les propriétaires-occupants décident de faire des travaux de rénovation dans leur maison. L'étude a été divisée en deux étapes. La première consistait à analyser les données de Statistique Canada sur les dépenses consacrées à la réparation et la rénovation des logements afin de mieux comprendre le fonctionnement du marché de la rénovation. Les résultats indiquent :

- Un faible pourcentage des consommateurs qui ont déclaré avoir fait des réparations ou des rénovations dans leur logement (4,5 %) ont assumé plus de la moitié de l'ensemble des frais de rénovation.
- Ces travaux importants coûtaient, en moyenne, plus de 16 000 \$.
- Les maisons anciennes (construites avant 1970) n'étaient pas rénovées dans une plus forte proportion que les logements plus récents.
- Les jeunes entreprennent des travaux de rénovation plus rapidement après l'achat de leur maison tandis que les propriétaires âgés de plus de 40 ans attendent généralement cinq ans avant d'entreprendre de gros travaux.

## RESIDENTIAL REHABILITATION RÉNOVATION DE LOGEMENTS

Les données qualitatives ont été recueillies auprès de 20 groupes de propriétaires de maison à Kitchener-Waterloo, en Ontario, et à Victoria, en Colombie-Britannique pour établir comment la décision de rénover était prise. Deux groupes participaient aux discussions soit les propriétaires qui venaient de terminer d'importants travaux de rénovation et ceux qui comptaient en entreprendre prochainement. Il ressort des discussions avec les participants que de nombreux consommateurs ont besoin de renseignements précis sur le processus de rénovation et les diverses étapes à franchir pour planifier et gérer leur projet. Par exemple, de nombreux propriétaires ne comprennent pas la nécessité d'avoir des plans précis pour l'établissement des devis concernant des projets de rénovation importants. La plupart ne comprennent pas ce que fait un entrepreneur en rénovation ou quand ils ont besoin d'un entrepreneur. En outre, les concepts d'habitation récents tels que la salubrité, l'efficacité énergétique et la ventilation centrale sont souvent considérés par les propriétaires comme des systèmes réservés aux maisons neuves.

NOTE: Also available in English under the title: *The Renovation Market and Renovation Consumers.*

### THE RENOVATION MARKET AND RENOVATION CONSUMERS.

*Prepared by David Foster, Energy Pathways Inc. Prepared for Research Division, Canada Mortgage and Housing Corporation, Ottawa: CMHC, 1994*

The objective of this research project was to develop an improved understanding of how homeowners make decisions about their home renovation projects. The research was divided into two phases. In the first phase, Statistics Canada data on home repair and renovation expenditures was analyzed to better understand how the renovation market functions. The results indicate that:

- A small number of homeowners reporting a home repair or renovation expense (4.5%) are responsible for more than half of all renovation expenditures.
- These larger projects involved an average cost in excess of \$16,000.
- Older (pre-1970) homes were no more likely to be renovated than newer units.
- Younger homeowners undertake renovations more rapidly after purchasing a home; owners over the age of 40 are most likely to have owned the home for five years before undertaking a major renovation.

The qualitative research phase of this project involved a series of 20 focus group sessions with homeowners in Kitchener-Waterloo, Ontario, and Victoria, British Columbia, to examine how renovation decisions are made. Discussions involved two groups - homeowners who had recently completed a major renovation and those planning to begin such a project in the near future. Based on discussions with these homeowners many consumers need clear information about the process of renovation and the various steps they should take in planning and managing their projects. For instance, many homeowners do not understand the need to have formalized designs and working drawings to support the bidding process in substantial renovation projects. Most do not understand what a renovation contractor does, or when such a contractor is needed. In addition, more recent housing concepts such as the healthy house, energy upgrading and whole-house ventilation are often seen by homeowners as only being relevant to new construction.

NOTE : Aussi disponible en français sous le titre : *Le marché de la rénovation et sa clientèle.*

**ASSESSMENT REPAIR  
STRATEGY FOR EXISTING  
BUILDINGS CONSTRUCTED  
WITH MASONRY VENEER  
STEEL STUD WALLS**

**Objective:**

To develop an overall assessment strategy for determining the extent of repairs required for existing buildings constructed with brick veneer steel stud systems.

**Division:**

Housing Innovation Division

**Contractor:**

T.W.J. Trestain  
573 Durie Street  
Toronto, Ontario  
M6S 3H2

**CIDN:**

0937 0300001

**Central Registry:**

6796-3-8

**ASSESSMENT STRATEGY  
FOR FLAT ROOFS**

**Objective:**

To develop a training program and inspection protocol which can be used by inspectors, building owners, and their maintenance staff.

**Division:**

Housing Innovation Division

**Contractor:**

Public Works and  
Government Services Canada  
Architectural and Engineering  
Services, Res. Dev.  
Sir Charles Tupper Building  
Riverside Drive, Room D-525  
Ottawa, Ontario  
K1A 0M2

**CIDN:**

1318 0300001

**Central Registry:**

6796-20

**HOMEOWNER MOTIVATION  
AND INNER CITY  
REVITALIZATION: AN  
EXAMINATION OF RELATED  
FACTORS IN WINNIPEG**

**Objective:**

To carry out an examination of homeowner motivation and inner city revitalization; to identify three inner city areas for analysis in the City of Winnipeg, selected on the basis of high levels of renovation activity.

**Division:**

Research Division  
External Research Program

**Contractor:**

Christine D. McKee  
City Planning Department  
University of Manitoba  
Faculty of Architecture  
201 Russell Building  
Winnipeg, Manitoba  
R3T 2N2

**CIDN:**

1277 0200001

**Central Registry:**

6585-M105-1

**LOCAL INDICATORS OF  
RENOVATION SPENDING**

**Objective:**

To carry out a study of local indicators of renovation spending; determine the reliability of current measures of renovation activity at the CMA level; make recommendations for the construction of comprehensive, reliable and timely indicators of renovation activity, and develop the indicators for selected CMAs.

**Division:**

Market Analysis Centre

**Contractor:**

Clayton Research Associates  
Limited  
1580 Kingston Road  
Scarborough, Ontario  
M1N 1S2

**CIDN:**

1234 1000001

**Central Registry:**

6905-17



## RESIDENTIAL REHABILITATION RÉNOVATION DE LOGEMENTS

### MASONRY VENEER STEEL STUD RENOVATION STRATEGIES

**Objective:**

To evaluate different retrofit brick ties for repairing existing brick veneer/steel stud systems.

**Division:**

Housing Innovation Division

**Contractor:**

University of Waterloo  
Building Engineering Group  
Waterloo, Ontario  
N2L 3G1

**CIDN:**

0787 0300001

**Central Registry:**

6796-3-7

### PREPARE GUIDELINES FOR THE APPLICATION OF THE NATIONAL BUILDING CODE IN RENOVATION WORK

**Objective:**

To carry out a project to prepare guidelines for the application of the National Building code in renovation work.

**Division:**

Professional Services and  
Standards Division

**Contractor:**

A.T. Hansen Consulting  
Services  
702 Roanoke Street  
Ottawa, Ontario  
K1K 2G4

**CIDN:**

1327 0300001

**Central Registry:**

6615-17

## Ongoing Projects/Projets en cours

### IMPROVEMENTS IN ON-SITE WASTEWATER TREATMENT

**Objective:**

To evaluate the performance of household water conservation, in association with an innovative technology for septic tank effluent treatment and nitrogen removal, to provide more cost-effective and reliable on-site wastewater treatment.

**Division:**

Research Division

**Contractor:**

Technical University of Nova  
Scotia  
Centre for Water Resources  
Studies  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1047 0200001

**Central Registry:**

6785-5

### LOWER COST ALTERNATIVE FOR MUNICIPAL SEWER INSPECTION AND MAINTENANCE

**Objective:**

To reduce subdivision servicing costs by the design, development and testing of a technically sound and innovative structure to replace, at a lower cost, the conventional manhole.

**Division:**

Research Division  
External Research Program

**Contractor:**

Butler Krebs & Associates  
Inc.  
8616 - 51 Avenue  
Suite 210  
Edmonton, Alberta  
T6E 6E6

**CIDN:**

1274 0200001

**Central Registry:**

6585-K040-1

### A NEW PROCEDURE FOR EVALUATING THE PERFORMANCE OF ON-SITE SYSTEMS

**Objective:**

To assess the value of the leachfield evaluation test; a method for assessing the hydraulic performance of an on-site sewage disposal system.

**Division:**

Research Division  
External Research Program

**Contractor:**

Dr. Donald H. Waller  
Technical University of Nova  
Scotia  
Centre for Water Resources  
Studies  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1289 0200001

**Central Registry:**

6585-W029-3

## Completed Reports/Rapports terminés

### COMMUNITY DEVELOPMENT, QUALITY OF LIFE AND FEAR OF CRIME IN TEN PUBLIC HOUSING COMMUNITIES IN CANADA: FINAL REPORT.

*Prepared by The Federation of Canadian Municipalities. Prepared for Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1993.*

This report examines quality of life and fear of crime in ten public housing communities in Canada. It also presents a summary of a national consultation held in Ottawa in February 1993 and describes the ten housing communities that participated in it. Public housing communities have traditionally had a high degree of crime and provided their residents with a lower quality of life than urban dwellings. The working hypothesis of this study was that residents of highly developed communities experience a higher quality of life and less fear of crime than residents of less developed communities. Three communities were selected to examine quality of life and fear of crime: one with little or no development (Mayfair, Winnipeg); one with a moderate level of development (Upper Dawson, Bathhurst, N.B.); and one with a high degree of development (Russell Heights, Ottawa).

The results of the research demonstrate that residents in public housing communities with more programs and resources experience a higher quality of life and less fear of crime than residents in communities with fewer resources. It is not the programs or resources themselves, however, that lead to the higher quality of life or less fear of crime reported. Residents in many communities rich in programs and resources experience a low quality of life and high fear of crime. The data suggests that part of the explanation for these findings rests on the development of community pride and a sense of ownership. The programs and resources brought into these communities are often a vehicle for getting people to meet and work cooperatively with each other. In fact, the level of organization in some of the communities that took part in the study far surpasses that found in most Canadian neighbourhoods.

NOTE : Aussi disponible en français sous le titre : *Développement communautaire, qualité de vie et peur du crime dans dix collectivités de logement public au Canada : Rapport final.*

### DÉVELOPPEMENT COMMUNAUTAIRE, QUALITÉ DE LA VIE ET PEUR DU CRIME DANS DIX COLLECTIVITÉS DE LOGEMENT PUBLIC AU CANADA : RAPPORT FINAL.

*Préparé par la Fédération canadienne des municipalités. Préparé pour la Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1993.*

Ce rapport examine la qualité de la vie et la peur du crime dans dix collectivités de logement public au Canada. Il présente également un résumé de la consultation nationale tenue à Ottawa en février 1993 et décrit les dix collectivités qui y ont participé. Depuis toujours, les collectivités de logement public sont frappées par une criminalité élevée et offrent à leurs résidents une qualité de vie inférieure à celle de nombreux autres citoyens. L'hypothèse de travail de cette étude est que les résidents des collectivités très développées connaissent une meilleure qualité de vie et une moins grande peur du crime que ceux des collectivités moins développées. Trois collectivités ont été sélectionnées pour examiner la qualité de la vie et la peur du crime : la première collectivité n'ayant été l'objet d'à peu près aucun développement (Mayfair, Winnipeg); la deuxième, celle où un développement moyen a eu lieu (Upper Dawson, Bathhurst, N.B.); et la troisième jouissant d'un degré de développement élevé (Russell Heights, Ottawa).

Les résultats de cette recherche démontrent que les résidents des collectivités de logement public ayant plus de programmes et de ressources jouissent d'une qualité de vie supérieure et ont moins peur du crime que les résidents des collectivités ayant moins de ressources. Ce ne sont pourtant ni les programmes ni les ressources qui conduisent à une plus grande qualité de vie ou à une moins grande peur du crime. Des résidents de nombreuses collectivités riches en programmes et en ressources ont une piètre qualité de vie et éprouvent une grande peur devant la criminalité. Les données indiquent que cela tient en partie au développement d'une fierté communautaire et du sentiment de propriété. Les programmes et les ressources fournis à ces collectivités sont souvent le véhicule servant à réunir les gens et à faire en sorte qu'ils collaborent les uns avec les autres. En fait, le niveau d'organisation de certaines collectivités ayant pris part à l'étude dépasse de loin celui de la plupart des quartiers du Canada.

NOTE: Also available in English under the title: *Community Development, Quality of Life and Fear of Crime in Ten Public Housing Communities in Canada: Final Report.*

## Ongoing Projects/Projets en cours

### ANALYSIS OF THE RELATIVE COST AND EFFECTIVENESS OF SELECTED SOCIAL RENTAL HOUSING PROGRAMS

#### Objective:

To assess the effectiveness of selected rental housing programs in addressing the problems of affordability, adequate supply, and housing quality. The study will determine how traditional non-profit supply programs and shelter allowances perform, over time under different market conditions.

#### Division:

Senior Vice-President's Office  
Policy, Research and  
Communications

#### Contractor:

Canadian Housing and  
Renewal Association  
251 Laurier Avenue West  
Suite 304  
Ottawa, Ontario  
K1P 5J6

#### CIDN:

1351 0600001

#### Central Registry:

8745-5

### CREATION OF THE LONGITUDINAL ADMINISTRATIVE DATABASE (LAD) AND LINKAGE OF SOCIAL HOUSING DATA

#### Objective:

To create a longitudinal database of Canadian individuals, including a sample of residents of social housing with their family characteristics over the period from 1982 to 1993. The newly created database will permit analysis of the dynamics of income, employment and family composition among Canadian households.

#### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

#### Contractor:

Statistics Canada  
26th Floor, RHC  
Tunney's Pasture  
Ottawa, Ontario  
K1A 0T6

#### CIDN:

0895 0200001

#### Central Registry:

6855-9-2

### DEMONSTRATION STUDY OF RESIDENT PARTICIPATION IN THE FLEMINGDON PARK COMMUNITY

#### Objective:

To carry out a demonstration study of resident participation in the Flemingdon Park Community.

#### Division:

Strategic Planning and Policy  
Development Division

#### Contractor:

Partners in Equality  
17 Yarmouth Gardens  
Toronto, Ontario  
M6G 1W3

#### CIDN:

1195 0100001

#### Central Registry:

F8655/35-1



## SOCIAL HOUSING/LOGEMENT SOCIAL

### DEVELOPMENT OF INDICATORS OF QUALITY OF LIFE, HEALTH AND WELL-BEING IN CANADIAN SOCIAL HOUSING

**Objective:**

To develop indicators of health and well-being which would apply to social housing and could be used by CMHC for research, policy analysis and program evaluation.

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

**Contractor:**

Veronica Doyle  
1317 Richardson Street  
Victoria, British Columbia  
V8S 1P6

**CIDN:**

1023 0200003

**Central Registry:**

6855-9-3

### DOCUMENTATION AND EVALUATION OF THE REDEVELOPMENT OF THE STRATHCONA HEIGHTS PROJECT

**Objective:**

This project is jointly funded by the City of Ottawa, the Ontario Ministry of Housing and CMHC. Its objective is to document and evaluate the regeneration of the Strathcona Heights social housing project in Ottawa. The regeneration occurred from 1988 to 1994. The project will cover the redevelopment of the site and services, neighbourhood improvement, tenant relocation and selection, acquisition and planning, and tenant participation and public consultation.

**Division:**

Housing Innovation Division

**Contractor:**

The City of Ottawa  
Dept. of Housing & Property  
300-11 Holland Avenue  
Ottawa, Ontario  
K1Y 4T2

**CIDN:**

1145 0300001

**Central Registry:**

6615-16

### CMHC COLLABORATION WITH FCM CONCERNING THE OECD PROJECT GROUP ON THE ECOLOGICAL CITY

#### Objective:

To produce a draft national overview paper and undertake other activities to represent Canada in relation to the project of the Organization for Economic Cooperation and Development (OECD) entitled "The Ecological City".

#### Division:

International Relations  
Division

#### Contractor:

Federation of Canadian  
Municipalities  
24 Clarence Street  
Ottawa, Ontario  
K1N 5P3

#### CIDN:

1313 0900001

#### Central Registry:

4305-4-13

### THE DEVELOPMENT OF ALTERNATIVE SITE PLAN FOR THE CMHC NATIONAL OFFICE LANDS

#### Objective:

Using CMHC National Office lands as a case study, this project will develop alternative site plans which respond to the imperatives of sustainable suburban development. The study will assess and document the constraints and impediments to more sustainable subdivision plans.

#### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

#### Contractor:

Barry J. Hobin & Assoc.  
Arch. Inc.  
Glebe Chambers  
711 Bank Street  
Ottawa, Ontario  
K1S 3V1

#### CIDN:

1205 0200001

#### Central Registry:

3895-14

### HEALTHY HOUSING DEMONSTRATION

#### Objective:

The construction of a demonstration autonomous house in Toronto in general accordance with the winning housing design in CMHC's healthy housing design competition.

#### Division:

Research Division

#### Contractor:

Liefhebber, Martin  
Architect Inc.  
177 First Avenue  
Toronto, Ontario  
M4M 1X3

#### CIDN:

0779 0202003

#### Central Registry:

6750-5

### OPPORTUNITIES FOR ACCELERATING IMPLEMENTATION OF ENVIRONMENTALLY SUSTAINABLE HIGH PERFORMANCE HOUSING

#### Objective:

To review current housing innovations and select five having the greatest potential for positive environmental impact; to assess their advantages and industry readiness to incorporate them into construction practice; to identify and present opportunities, impediments and strategies to bring innovations into mainstream housing.

#### Division:

Research Division  
External Research Program

#### Contractor:

Robert J. Booth  
Hansed Booth Incorporated  
Box 73A, R.R.#1  
Dalkeith, Ontario  
K0B 1E0

#### CIDN:

1271 0200001

#### Central Registry:

6585-B097

## **PERFORMANCE MONITORING OF THE VANCOUVER HEALTHY HOUSE**

### **Objective:**

To monitor and analyze the performance (energy usage, water consumption and indoor air quality) of CMHC's Vancouver Healthy House.

### **Division:**

Research Division

### **Contractor:**

SAR Engineering Ltd.  
8884-15th Avenue  
Burnaby, British Columbia  
V3N 1Y3

### **CIDN:**

0779 0203018

### **Central Registry:**

6740-5

## **TESTING CONSUMER RECEPTIVITY TO SUSTAINABLE AND MORE AFFORDABLE SUBURB DESIGN IN CALGARY**

### **Objective:**

To address the question:  
are Canadian consumers  
(houseseekers, homebuyers)  
receptive to residential  
community design that  
incorporates sustainable  
development principles and  
performance characteristics?

### **Division:**

Research Division  
External Research Program

### **Contractor:**

William T. Perks  
Faculty of Environmental  
Design  
Calgary University  
2500 University Drive, N.W.  
Earth Sciences  
Calgary, Alberta  
T2N 1N4

### **CIDN:**

1278 0200001

### **Central Registry:**

6585-P011-3

### **NEW VISIONS IN URBAN TRANSPORTATION: A WORKING SYMPOSIUM LEADING TO ACTION: PROCEEDINGS, APRIL 24-26, 1994, RADISSON HOTEL, OTTAWA CENTRE, OTTAWA, ONTARIO.**

*Sponsored by the Federation of Canadian Municipalities, the Transportation Association of Canada and the Canadian Institute of Planners. Ottawa: Transportation Association of Canada, 1994.*

Canada's urban environment is changing: infrastructure is aging and deteriorating, people are migrating to the suburbs, community links are imperilled, work habits and structures are changing, traffic of people and goods is increasing. Canada's future urban transportation systems will have to prepare for and respond to these changes. To tackle these issues, a diverse group of urban transportation representatives from across Canada joined together at the Symposium "New Visions in Urban Transportation" to develop specific strategies and actions to address the future of urban transportation systems.

This report covers the papers presented at the symposium, the major conclusions and results of the workshops, and the specific strategies and actions developed to implement productive, efficient, cost-effective and accessible urban transportation systems at the local level.

The strategies and actions pertain to: planning for increased urban and mixed land use to reduce travel distances and support walking, cycling and transit; creating better ways to fund future transportation systems; providing higher quality transit service to increase its attractiveness relative to the private vehicle; optimizing the use of existing transportation systems to move people and goods; creating an environment in which automobiles can play a more balanced role; planning parking supply and price to be in balance with other modes of transport; ensuring that urban transportation decisions protect and enhance the environment; and, managing travel demand to encourage changes in behaviour and choice of travel mode.

NOTE : Aussi disponible en français sous le titre : *Nouvelles visions des transports urbains : symposium axé sur l'élaboration de mesures concrètes d'intervention : compte rendu.*

### **NOUVELLES VISIONS DES TRANSPORTS URBAINS : SYMPOSIUM AXÉ SUR L'ÉLABORATION DE MESURES CONCRÈTES D'INTERVENTION : COMPTE RENDU, À L'HÔTEL RADISSON (CENTRE-VILLE), OTTAWA (ONTARIO) DU 24 AU 26 AVRIL 1994.**

*Parrainé par la Fédération canadienne des municipalités, l'Association des transports du Canada et l'Institut canadien des urbanistes. Ottawa : L'Association des transports du Canada, 1994.*

L'environnement urbain du Canada change : les infrastructures vieillissent et se détériorent, la population migre vers les banlieues, les liens communautaires sont menacés, les habitudes et les structures de travail changent et le transport des personnes et des marchandises augmente. Les réseaux de transport urbain de demain devront s'adapter à ces changements. Pour aborder ces questions, un groupe diversifié de représentants des transports urbains de tous les coins du Canada se sont réunis dans le cadre d'un symposium intitulé «Nouvelles visions des transports urbains» dans le but de déterminer des stratégies et des mesures concrètes d'intervention pour les réseaux de transport urbain de demain.



## URBAN ENVIRONMENT/MILIEU URBAIN

Ce document renferme les rapports présentés lors du symposium, les principales conclusions et résultats des ateliers ainsi que les stratégies et les mesures concrètes d'intervention proposées en vue d'implanter, à l'échelle locale, des réseaux de transport urbain productifs, efficaces, rentables et accessibles.

Diverses stratégies et mesures d'intervention ont été proposées, notamment : prévoir de plus fortes densités urbaines et une occupation des sols plus diversifiée en vue de raccourcir la longueur des trajets et de favoriser la marche, la bicyclette et les transports en commun; trouver de meilleurs moyens de financer les réseaux de transport de demain; améliorer les services de transport en commun pour en augmenter l'attrait par rapport à celui de l'automobile; optimiser l'utilisation des réseaux de transport actuels des personnes et des marchandises; créer un milieu où l'automobile peut jouer un rôle plus pondéré; planifier l'offre et la tarification du stationnement en vue d'établir un équilibre avec les autres modes de transport; s'assurer que les décisions touchant les transports urbains contribuent à protéger et à améliorer l'environnement; et gérer la demande du transport en vue de favoriser la modification des comportements et des choix de modes de transport.

NOTE: Also available in English under the title: *New Visions in Urban Transportation: A Working Symposium Leading to Action: Proceedings.*

### Ongoing Projects/Projets en cours

#### LES ENSEMBLES RÉSIDENTIELS ET LA SÉCURITÉ ROUTIÈRE

##### Objet :

La présente recherche porte sur l'étude des rapports entre la forme des milieux résidentiels et la sécurité des déplacements des différents usagers de la route.

##### Division :

Division de la recherche  
Programme de subventions de recherche

##### Contractant :

Denise Piché  
École d'architecture  
Université Laval  
Québec (Québec)  
G1K 7P4

##### NIC :

0925 0200001

##### Numéro de la gestion des documents :

6585-P019-2

#### PAYSAGES DE L'INTÉRIEUR DANS L'ÎLE DE MONTRÉAL

##### Objet :

Cette étude part de la prémisse que le paysage public montréalais a été principalement conçu à partir de courants de pensées externes certains étant bien connus, identifiés et documentés, mais que par contre on ne sait presque rien sur le sens qu'accordent des Montréalais à leur paysage à travers leurs propres interventions et commandes paysagères.

##### Division :

Division de la recherche  
Programme de subventions de recherche

##### Contractant :

Madame Danièle Routaboule  
École d'Architecture de  
Paysage  
Université de Montréal  
5620, rue Darlington  
Montréal (Québec)  
H3C 3J7

##### NIC :

1284 0200001

##### Numéro de la gestion des documents :

6585-R039-1

### DEVELOPMENT OF EFFICIENCY IMPROVEMENT TIMELINESS FOR RESIDENTIAL VENTILATION EQUIPMENT

#### Objective:

To assemble information on residential mechanical ventilation equipment (fans, blowers, heat exchangers), and to develop a consensus on how quickly the efficiency of these devices can and should be improved over the next decade.

#### Division:

Research Division

#### Contractor:

Buchan Lawton Parent Ltd.  
5370 Canotek Road  
Ottawa, Ontario  
K1J 8X7

#### CIDN:

1242 0200001

#### Central Registry:

6766-4

### EASE AIR BARRIER SYSTEM

#### Objective:

To aid the APCHQ and NRCan in the construction and evaluation of the External Air Barrier System Element (EASE) Demonstration Project. An energy-efficient house was constructed using a new wall assembly which incorporates a structural air barrier that is permeable to water vapour. The air barrier allows excess humidity in the home to migrate through the walls without causing wall degradation. This project will evaluate the performance of this wall assembly for moisture migration and structural soundness.

#### Division:

Housing Innovation Division

#### Contractor:

Morrison Hershfield Ltd.  
2440 Don Reid Drive  
Ottawa, Ontario  
K1H 8P5

#### CIDN:

1044 0300002

#### Central Registry:

6796-17

### ELECTRONIC SMOKE PENCIL

#### Objective:

The design and development of a battery operated electronic air leakage detection device.

#### Division:

Research Division  
Housing Technology  
Incentives Program

#### Contractor:

Singmin Enterprises  
9 Milne Crescent  
Kanata, Ontario  
K2K 1H7

#### CIDN:

1269 0200001

#### Central Registry:

6521-28/93

### FIELD STUDY OF OCCUPANT INTERACTIONS AND VENTILATION EFFECTIVENESS OF HEAT RECOVERY VENTILATION SYSTEMS

#### Objective:

To conduct a field study of occupant interactions and ventilation effectiveness of heat recovery ventilation systems.

#### Division:

Research Division  
Panel on Energy R & D

#### Contractor:

Buchan Lawton Parent Ltd.  
Suite 210  
30 East Beaver Creek  
Richmond Hill, Ontario  
L4B 1G6

#### CIDN:

1376 0800001  
1376 0200001

#### Central Registry:

6799-4

### HARMONIZATION OF VENTING TERMINOLOGY

#### Objective:

To identify all Canadian and United States of America codes and standards that use venting terms, developing a set of harmonized terms and definitions used in venting codes and standards.

#### Division:

Research Division

#### Contractor:

Buchan Lawton Parent Ltd.  
5370 Canotek Road  
Ottawa, Ontario  
K1J 8X7

#### CIDN:

1078 0200001

#### Central Registry:

6718-15-1

## PARE-AIR RIGIDE

### Objet :

Identifier les différents matériaux pouvant être utilisés pour la réalisation d'un pare-air en panneaux rigides en tenant compte de différents types d'application définis.

### Division :

Division de la recherche  
Programme de subventions de recherche

### Contractant :

Mario V. Petrone  
200 - 2545 rue Delorimier  
Longueuil (Québec)  
J4K 3P7

### CIDN :

1280 0200001

### Numéro de la gestion des documents :

6585-P057

## PRESSURE MODERATED SCREENED WALL SYSTEMS

### Objective:

To study the mechanics involved and to attempt to quantify the number, nature and location of vents in the exterior screen of per walls for optimum ventilation drying and pressure moderation; to measure the extent and mechanism of ventilation drying in an idealized per wall; and to measure the extent and mechanism of pressure moderation in an idealized per wall.

### Division:

Research Division  
External Research Program

### Contractor:

Eric F.P. Burnett  
University of Waterloo  
Waterloo, Ontario  
N2L 3G1

### CIDN:

1273 0200001

### Central Registry:

6585-B102

## SCIENTIFIC RESEARCH AND DEVELOPMENT CONCERNING VENTILATION SYSTEMS FOR NEW AND EXISTING HOUSES WITH ELECTRIC BASEBOARD HEATING

### Objective:

To identify designs of simple ventilation air distribution systems that are suitable for new and existing houses that lack fully ducted forced-air heating systems.

### Division:

Research Division

### Contractor:

National Research Council  
Institute for Research in  
Construction  
Building M-20  
Ottawa, Ontario  
K1A 0R6

### CIDN:

1124 0800001

### Central Registry:

6725-18-1

## TEST-RIG FOR EVALUATING RESIDENTIAL MOTOR-FAN SET PERFORMANCE

### Objective:

Development and testing of a device for testing the performance of residential ventilating equipment.

### Division:

Research Division  
Panel on Energy R & D

### Contractor:

Sheltair Scientific Ltd.  
2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

### CIDN:

1368 0800001  
1368 0200001

### Central Registry:

6766-5

## **VENTILATION CONTROL IN MEDIUM AIRTIGHTNESS HOUSES**

### **Objective:**

To investigate the variation of pollutant source strengths in 20 medium airtightness houses; to compare the ventilation rates of these houses to those proposed in the 1995 National Building Code; to check the effectiveness of ventilation system control through the use of an outdoor temperature sensor.

### **Division:**

Research Division  
Panel on Energy R & D

### **Contractor:**

Saskatchewan Research  
Council  
Building Science Division  
15 Innovation Boulevard  
Saskatoon, Saskatchewan  
S7N 2X8

### **CIDN:**

1179 0800001  
1179 0200001

### **Central Registry:**

6716-17-1

## **VENTILATION RESEARCH REPORT**

### **Objective:**

- To demonstrate simple and effective ventilation systems designed in accordance with the 1990 National Building Code.
- To evaluate these ventilation systems with respect to distribution capabilities, noise levels and power usage.
- To demonstrate various control strategies for the ventilation systems.

### **Division:**

Research Division  
Panel on Energy R & D

### **Contractor:**

Everts-Lind Enterprises  
R.R.#3  
Bridgewater, Nova Scotia  
B4C 2W2

### **CIDN:**

0814 0801001

### **Central Registry:**

6730-5-7



## WATER CONSERVATION/EAU – CONSERVATION

### Ongoing Projects/Projets en cours

#### **HIGH FREQUENCY WATER SHUT OFF CONTROL**

##### **Objective:**

Develop a working prototype of the high frequency water shut off control unit.

##### **Division:**

Research Division  
Housing Technology  
Incentives Program

##### **Contractor:**

Victor J. Diduck  
755 Kyle Drive  
Kamloops, British Columbia  
V2B 7J5

##### **CIDN:**

1265 0200001

##### **Central Registry:**

6521-18/93

#### **MEASUREMENT OF SPECTRAL TRANSMITTANCE OF REPRESENTATIVE GLAZING SAMPLES**

##### **Objective:**

To obtain the spectral transmittance data of a representative group of window glazings including two-pane and three-pane assemblies with and without low-emissivity coatings; to present the data in a manner that would allow comparisons of the spectral characteristics of the window assemblies.

##### **Division:**

Research Division

##### **Contractor:**

University of Calgary  
Centre for Livable  
Communities  
2500 University Drive N.W.  
Calgary, Alberta  
T2N 0G3

##### **CIDN:**

1214 1100004

##### **Central Registry:**

6717-18

#### **A SURVEY OF HEALTH EFFECTS OF LOW-E WINDOWS**

##### **Objective:**

To determine if there is any existing evidence of a possible health impact of low-e windows on people.

##### **Division:**

Research Division

##### **Contractor:**

Murray Waldman  
Suite 1200  
191 Lombard Avenue  
Winnipeg, Manitoba  
R3B 0X1

##### **CIDN:**

1214 1100002

##### **Central Registry:**

6717-18

### Completed Reports/Rapports terminés

#### **LES FEMMES DANS LES VILLES CANADIENNES : LOGEMENT ET SERVICES URBAINS: ÉNONCÉ DE POSITION DU CANADA SUR UN PROJET DE CONFÉRENCE DE L'OCDE = WOMEN IN CANADA'S CITIES: HOUSING AND URBAN SERVICES: POSITION PAPER OF CANADA ON OECD'S PROPOSAL FOR A CONFERENCE.**

*Ottawa : Division des relations internationales, Société canadienne d'hypothèques et de logement, 1994.*

Ce document vise à énoncer la position du Canada au sujet de la proposition du Secrétariat du Groupe des affaires urbaines de l'Organisation de coopération et de développement économiques (OCDE) de tenir une conférence à l'automne 1994 ayant pour thème «Les femmes et la ville - logement et services urbains». Pour rédiger le document, on a posé comme principe que la contribution du Canada à la conférence de l'OCDE devrait mettre en lumière les «meilleures pratiques» de notre pays dans un nombre limité de domaines concernant les femmes et la vie urbaine. Les femmes sont des partenaires solides dans tous les secteurs de la société canadienne, et elles jouent un rôle essentiel dans les domaines politique, commercial, familial et social. Pour appuyer cette affirmation, le document présente tout d'abord un aperçu des principaux aspects de la condition de la femme au Canada sous la forme d'un profil statistique et d'un débat sur la situation sociale et économique des femmes dans les villes canadiennes. Puis, il décrit les pratiques canadiennes dans trois domaines : les initiatives en matière de politique touchant la sécurité urbaine, la gamme de logements adaptés aux besoins des femmes et l'utilisation de la législation sur les droits de la personne pour accroître l'accessibilité des femmes aux installations et aux services offerts par les villes. Enfin, le rapport se penche sur l'avenir des femmes dans les villes et se termine en donnant le point de vue du Canada sur le projet de conférence de l'OCDE en général.

NOTE: Bilingue/bilingual.

#### **WOMEN IN CANADA'S CITIES: HOUSING AND URBAN SERVICES: POSITION PAPER OF CANADA ON OECD'S PROPOSAL FOR A CONFERENCE = LES FEMMES DANS LES VILLES CANADIENNES : LOGEMENT ET SERVICES URBAINS : ÉNONCÉ DE POSITION DU CANADA SUR UN PROJET DE CONFÉRENCE DE L'OCDE.**

*Ottawa: International Relations Division, Canada Mortgage and Housing Corporation, 1994.*

The purpose of this paper is to convey Canada's views on the proposal, by the Secretariat of the Group on Urban Affairs of the Organisation for Economic Cooperation and Development (OECD), to hold a conference during the autumn of 1994 on the topic "Women in the City - Housing and Urban Services". The central assumption on which the paper was produced, is that Canada's contribution to the OECD conference should highlight the country's "best practices" in a limited number of areas concerning women and urban life. Women are strong partners throughout Canadian society, with key roles in political, business, family and social life. To present this situation, the paper first provides a basic overview of key dimensions of the status of women in Canada in the form of a statistical profile and a discussion of the social and economic context for women in Canada's cities.

Then it discusses Canadian practice in three areas: policy initiatives relating to urban safety; the range of housing directed to meeting women's needs; and the use of human rights legislation to expand women's accessibility to urban services and facilities. Following these discussions, the paper considers the future of women in cities, and concludes with some comments on the overall OECD conference proposal from Canada's perspective.

NOTE: Bilingual/bilingue.

## Ongoing Projects/Projets en cours

### ATLANTIC WOMEN AND HOUSING; ARE WE PREPARED FOR THE 21ST CENTURY? CONFERENCE JUNE 1994

#### Objective:

The objectives of this conference were to produce innovative housing options which do not involve significant funding; to improve knowledge of and better utilization of existing housing resources; to sensitize government and other public agencies to the

housing problems of women and families; to encourage and produce co-ordination and cooperation among organizations in the community interested in the housing problems of women. The compendium of conference proceedings will include summaries of the research presentations, panel discussions and workshops conducted.

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

Habitation New Brunswick  
53 Alexander Avenue  
Moncton, New Brunswick  
E1E 1T3

#### CIDN:

1342 010000

#### Central Registry:

0226-1



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## INTRODUCTION/INTRODUCTION

Under Part IX of the National Housing Act the Government of Canada provides funds to Canada Mortgage and Housing Corporation to conduct research into the social, economic and technical aspects of housing and related fields.

*Housing Research Quarterly* is compiled and produced on a quarterly basis by the Canadian Housing Information Centre. This publication provides information and access to research which is undertaken and sponsored by the Corporation.

The publication contains information on completed research reports, new publications, videos and bibliographies, as well as ongoing research projects. An alphabetical title index of items listed is included at the end for quick reference.

"Ongoing Projects" refer to research projects which are currently underway. No reports are yet available. Once the project is completed, and a report is available for distribution, it will be listed in *Housing Research Quarterly* under the "Completed Reports" area with a full bibliographic citation and abstract. The "Ongoing Projects" sections of *Housing Research Quarterly* contain the following information:

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En vertu de la Partie IX de la loi nationale sur l'habitation le gouvernement du Canada fournit des fonds à la Société canadienne d'hypothèques et de logement pour la recherche sur les aspects sociaux, économiques et techniques du logement et des domaines connexes.

*Recherche en logement-rapport trimestriel* est produit chaque trimestre par le Centre canadien de documentation sur l'habitation. Il contient des renseignements sur la recherche entreprise et subventionnée par la Société.

La publication présente des renseignements sur les rapports de recherche, les nouvelles publications, les vidéos et les bibliographies, ainsi que sur les projets de recherche en cours. Une liste alphabétique par titres, facile à consulter, se trouve à la fin de l'ouvrage.

Tous les projets non terminés, n'ayant pas encore fait l'objet d'un rapport sont des «projets en cours». Une fois qu'il sera terminé, publié et disponible, le rapport figurera dans la publication *Recherche en logement-rapport trimestriel* sous la rubrique «Rapports terminés» avec références bibliographiques et sommaire. Les sections «Projets en cours» de *Recherche en logement-rapport trimestriel* contiennent les renseignements suivants :

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### MODELLING OF ROAD NOISE AND OPTIMAL BARRIER DESIGN

#### Objective:

This study will apply the newly developed modelling tools to the prediction of road noise attenuation utilizing barriers and berms.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Dr. Ken R. Fyfe  
Department of Mechanical  
Engineering  
University of Alberta  
Edmonton, Alberta  
T6G 2G8

#### CIDN:

1086 0200001

### Ongoing Projects/Projets en cours

#### **DEMONSTRATION OF IMPROVED ATTIC VENTILATION AND MOISTURE CONTROL STRATEGIES**

##### **Objective:**

Test unconventional attic ventilation strategies in both new and existing houses. Use the existing attic computer program to help select which venting strategy will work best.

##### **CMHC Project Officer:**

D. Fugler

##### **Division:**

Research Division

##### **Contractor:**

Sheltair Scientific Ltd.  
#2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 2P1

##### **CIDN:**

1377 0200001  
1377 0800001

#### **METHODS OF CONSTRUCTING DRY, FULLY INSULATED BASEMENTS: REPORT ON PHASE 1 OF THE ONTARIO BASEMENT RESEARCH PROJECT.**

*Prepared by Scanada Consultants Limited. Prepared for the Ontario Home Builders' Association and Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1991, i.e. 1995.*

This research was commissioned by the Ontario Home Builders' Association to investigate critical aspects of basement wall performance. Specifically, the project addressed the problems of water leaks and examined the feasibility of installing full-height insulation at the time of construction. This report presents the results of Phase 1 of the study. It examines the basic requirements for concrete and concrete-block basement systems with respect to site conditions, construction moisture and winter condensation, energy efficiency, livability expectations and cost criteria. The report also discusses, in detail, the requirements for providing effective interior and exterior insulation as well as the pros and cons of each method. In addition, the performance requirements of several interior and exterior insulated wall systems are evaluated according to a point system. New systems which may not yet be "code-approved" are also rated.

#### **Ongoing Projects/Projets en cours**

##### **SURVEY OF FINISHED BASEMENTS**

###### **Objective:**

Survey 400 or more finished basements in the Ottawa vicinity, through a short inspection and householder questionnaire regarding basement dampness.

###### **CMHC Project Officer:**

D. Fugler

###### **Division:**

Research Division

###### **Contractor:**

Rosemary Spencer  
1358 Kingston Avenue  
Unit #1  
Ottawa, Ontario  
K1Z 8L2

Cate Soroczan  
1984 Quincy Avenue  
Gloucester, Ontario  
K1J 6B5

###### **CIDN:**

1386 0200002  
1386 0200003



## Ongoing Projects/Projets en cours

### **IMPACT OF THE REQUIREMENTS CONTAINED IN THE 1995 NATIONAL ENERGY CODE**

#### **Objective:**

To manage studies which analyze the impact of the requirements contained in the 1995 National Energy Code.

#### **CMHC Project Officer:**

W. Webster

#### **Division:**

Research Division

#### **Contractor:**

Ontario Hydro  
Building Performance  
700 University Avenue  
Toronto, Ontario  
M5G 1X6

#### **CIDN:**

1387 0200002

### **ISSUE PAPER ON THE NATIONAL BUILDING CODE OF CANADA**

#### **Objective:**

To prepare an overview of a paper previously developed by the contractor entitled "Issues Paper on the National Building Code of Canada" and a series of proposals for discussion at a meeting to be held December 7 & 8 1994.

#### **CMHC Project Officer:**

S.A. Rothwell

#### **Division:**

Research Division

#### **Contractor:**

Revay and Associates  
85 Albert Street  
Suite 600  
Ottawa, Ontario  
K1P 6A4

#### **CIDN:**

1388 0200001

#### **EXTERIOR INSULATION FINISH SYSTEMS: LABORATORY EVALUATION OF MATERIALS AND JOINTS SUBJECTED TO ARTIFICIAL CONDITIONING: CANADA MORTGAGE & HOUSING CORPORATION (CMHC) RESEARCH REPORT.**

*Prepared by Lawrence Gibson. Testing conducted by Doug Docherty, Ken Zeleschuk and Geri Nischio. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

During the past decade, Exterior Insulation Finish Systems (EIFS) have become a popular alternative to traditional cladding systems; however, over the last few years some concern has been raised on the durability of the systems to resist weathering. This report outlines testing conducted on EIFS joints to evaluate bond strength and water resistance of a number of different joint designs when exposed to accelerated aging conditions and simulated joint movement. Tests were also conducted on the EIFS lamina to evaluate its water vapour permeance, thermal coefficient of expansion and dry shrinkage.

The main conclusions that were drawn from the testing are summarized below:

- Multi-component urethane low modulus sealant had the greatest bond strength to a primed basecoat, while the silicone sealant exhibited the greatest elongation when bonded to a primed basecoat.
- Joint designs using some sort of secondary seal provided better resistance to water infiltration than did the traditional systems.
- Moisture permeability was highly affected by the lamina thickness; thin lamina was found to contain more imperfections that allowed moisture penetration.
- The dry shrinkage rate of the lamina during curing was found to be relatively small (in the 1mm/m range).
- The thermal coefficient of expansion was in the order of 0.011 mm/m.

## CLADDING/PAREMENT

### A STUDY OF MEAN PRESSURE GRADIENTS, MEAN CAVITY PRESSURES, AND RESULTING RESIDUAL MEAN PRESSURES ACROSS A RAINSCREEN FOR A REPRESENTATIVE BUILDING.

*Prepared by P.F. Skerlj and D. Surry. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

Experiments were conducted in the Boundary Layer Wind Tunnel at the University of Western Ontario to examine the mean pressure gradients on the external surface of a representative building and to investigate the resulting net rainscreen pressures. A module comprising a variable number of vented compartments was used to determine external mean pressure distributions, mean cavity pressures and resulting mean pressures across the outer wall of a rectangular building model at six locations on the long face. At each location, wind angles ranging from normal to parallel to the long building face were examined. The bulk of experiments were performed using a compartment width (the dimension parallel to the array of external pressure taps) of 2 m in full scale. A limited number of experiments were also performed which considered 1-m, 2-m, 4-m and 8-m compartment widths.

External pressure results show steep horizontal and vertical external mean pressure gradients near side and top edges respectively. For a typical 10 year dynamic pressure of 300 Pa (hourly mean speed of 78 km/hr), pressure gradients as large as 260 Pa/m were measured near the top corner. The gradients over interior regions of the building face were generally found to be smaller. Measurements of mean internal cavity pressures verify that compartments do not pressure-equalize when exposed to large external gradients. In this situation, significant residual mean pressure differences result across the rainscreen. As expected, net mean rainscreen pressures were found to decrease with decreasing compartment size and with decreasing mean pressure gradient. Hence, regions near edges, which generally contain large external pressure gradients, require frequent compartmentalization to reduce residual pressures.

### Ongoing Projects/Projets en cours

#### **EIFS RAINSCREEN PRODUCT SYSTEM**

##### **Objective:**

Develop new methods of installing exterior insulation and finish systems (EIFS). The new product system will encompass interconnected aspects of the wall portion of the building envelope.

##### **CMHC Project Officer:**

M. Macpherson

##### **Division:**

Research Division  
Housing Technology  
Incentives Program

##### **Contractor:**

STO Enterprises Inc.  
3495 Laird Road  
Units 16-18  
Mississauga, Ontario  
L5L 5S5

##### **CIDN:**

1268 0200001  
1268 0201001

#### **FIELD TEST OF IMPROVED WALLS**

##### **Objective:**

To carry out monitoring on a highrise residential building in Ottawa to assess performance of the brick veneer/steel stud envelope.

##### **CMHC Project Officer:**

J. Rousseau

##### **Division:**

Housing Innovation Division

##### **Contractor:**

Keller Engineering Associates  
Inc.  
1390 Prince of Wales Drive  
Ottawa, Ontario  
K2C 3N6

##### **CIDN:**

0411 0301001  
0411 0302001  
0411 0303001

## **PAPER ON MONITORING OF A BRICK VENEER STEEL STUD WALL SYSTEM**

### **Objective:**

To prepare a paper based on the study "Performance of a brick veneer steel stud wall system - Phase 2".

### **CMHC Project Officer:**

J. Rousseau

### **Division:**

Housing Innovation Division

### **Contractor:**

Kerr Associates  
425 Pepperlaw Road  
Pepperlaw, Ontario  
L0E 1N0

### **CIDN:**

0937 0300003

## **PREPARATION OF BEST PRACTICE GUIDE FOR FLASHING DETAILS, MASONRY VENEER/ CONCRETE BLOCK CONSTRUCTION AND WOODFRAME CONSTRUCTION**

### **Objective:**

To prepare three guides on building envelope design:  
1) a 'best practice' guide for concrete block exterior wall construction; 2) a 'best practice' guide for various exterior wall assemblies with wood frame construction; 3) a 'best practice' guide for the flashing of wood, concrete and steel frame building envelopes. The documents will contain details, specifications, sequence of construction and information on inspection and commissioning.

### **CMHC Project Officer:**

J. Rousseau

### **Division:**

Housing Innovation Division

### **Contractor:**

Robert Halsall &  
Associates/Otto & Bryden  
Arch.  
210 Gladstone Avenue  
Ottawa, Ontario  
K2P 0Y6

### **CIDN:**

0974 0300001

## **RAIN CONTROL AND WIND DRIVEN RAIN**

### **Objective:**

To carry out work aimed at producing guidelines for the testing and commissioning of pressure equalized rainscreen walls.

### **CMHC Project Officers:**

J. Rousseau; P.-M. Busque

### **Division:**

Housing Innovation Division

### **Contractor:**

Quirouette Building Envelope  
Specialists  
18 Crispin Private  
Ottawa, Ontario  
K1K 2T8

### **CIDN:**

1123 0304002  
1123 0300004

## **TESTING OF REINFORCED OR PRE-STRESSED BRICK VENEER WALL SYSTEMS USING A BRICK VENEER WALL SYSTEM**

### **Objective:**

To demonstrate the feasibility and potential for reinforced or pre-stressed brick veneer wall systems, and to identify further research and development needs including laboratory investigations, design details, and construction guidelines.

### **CMHC Project Officer:**

M. Macpherson

### **Division:**

Research Division  
Housing Technology  
Incentives Program

### **Contractor:**

Canada Brick  
2121 Britannia Road West  
Box 668  
Streetsville, Ontario  
L5M 2C3

### **CIDN:**

1177 0200001

## **ZERO-CAVITY, PRESSURE EQUALIZED RAINSCREEN WALL SYSTEM**

### **Objective:**

To investigate the performance of the zero-cavity, pressure equalized rainscreen wall system. To investigate the consequences of completely filling the air space behind brick cladding with a fibrous, draining insulation to answer the following questions: can masons build this wall, will the insulation drain, will the cavity pressure equalize, will the brick become too warm or too cold, and will the water reach the sheathing by capillary action?

### **CMHC Project Officer:**

J. Rousseau

### **Division:**

Housing Innovation Division

### **Contractor:**

University of Waterloo  
Building Engineering Group  
Civil Engineering Department  
Waterloo, Ontario  
N2L 3G1

### **CIDN:**

0689 0300001



## Ongoing Projects/Projets en cours

### **DEVELOPMENT OF A NEW EDITION OF THE STANDARD FOR CONCRETE CONSTRUCTION FOR HOUSING AND SMALL BUILDINGS (CSA A438)**

#### **Objective:**

To carry out the development of a new edition of the standard for concrete construction for housing and small buildings (CSA A438).

#### **CMHC Project Officer:**

A. Houston

#### **Division:**

Research Division

#### **Contractor:**

Canadian Standards Association  
178 Rexdale Boulevard  
Toronto, Ontario  
M9W 1R3

#### **CIDN:**

1259 0200001

### **DURABILITY OF FIBRE-REINFORCED PLASTIC (FRP) REBARS IN CONCRETE STRUCTURES**

#### **Objective:**

Scientific research and development concerning the durability of fibre-reinforced plastic (FRP) rebars in concrete structures.

#### **CMHC Project Officer:**

A. Houston

#### **Division:**

Research Division

#### **Contractor:**

National Research Council  
1200 Montreal Road  
Ottawa, Ontario  
K1A 0R6

#### **CIDN:**

1172 0200001

### **CONDOMINIUM APARTMENT PARKING STANDARDS IN MISSISSAUGA, ONTARIO: CASE STUDY - NORMES RÉGISSANT LE STATIONNEMENT DES APPARTEMENTS EN COPROPRIÉTÉ À MISSISSAUGA (ONTARIO) : ÉTUDE DE CAS.**

*Affordability and Choice Today (A.C.T.) Streamlined Approval Process Project / Urban Development Institute, Peel Chapter, Mississauga, Ontario. Prepared by Energy Pathways Inc. Prepared for the Federation of Canadian Municipalities, Canadian Home Builders' Association, Canadian Housing and Renewal Association and Canada Mortgage and Housing Corporation. Ottawa: The Associations: The Federation: The Corporation, 1994.*

In 1990, the Urban Development Institute (UDI), Peel Chapter, in cooperation with the City of Mississauga, undertook an A.C.T. Project to review Mississauga's parking standards for condominium apartments and to recommend appropriate amendments to the zoning by-law. The study indicated that the residents of condominium apartments had household characteristics that differed substantially from those of Mississauga's general population. For example, condominium apartments had an average occupancy rate of 1.99 persons per unit, which was much lower than the city-wide average of 3.05 persons per residential unit.

However, the City of Mississauga zoning by-law specified a parking standard of two spaces per unit. The study found that, as a result of this inappropriate standard, there were at least 35 percent more resident parking spaces in condominium apartment buildings city-wide than were actually required. As a result of the study, UDI recommended a number of revisions to Mississauga's zoning by-law. On May 30, 1994, Mississauga City Council amended its zoning by-laws and reduced parking standards for condominium apartments, incorporating a number of UDI's recommendations.

NOTE: *Bilingual/bilingue.*

### **NORMES RÉGISSANT LE STATIONNEMENT DES APPARTEMENTS EN COPROPRIÉTÉ À MISSISSAUGA (ONTARIO) : ÉTUDE DE CAS = CONDOMINIUM APARTMENT PARKING STANDARDS IN MISSISSAUGA, ONTARIO: CASE STUDY.**

*Abordabilité et choix toujours (A.C.T) projet de simplification du processus d'approbation / Institut canadien d'aménagement urbain, chapitre Peel, Mississauga (Ontario). Préparé par Energy Pathways Inc. Préparé pour La Fédération canadienne des municipalités, L'Association canadienne des constructeurs d'habitations, L'Association canadienne d'habitation et de rénovation urbaine et La Société canadienne d'hypothèques et de logement. Ottawa : Les Associations : La Fédération : La Société, 1994.*

En 1990, l'Institut canadien d'aménagement urbain, chapitre de Peel, en coopération avec la ville de Mississauga, a entrepris un projet A.C.T ayant pour but de revoir les normes de stationnement à Mississauga concernant les appartements en copropriété et de recommander des modifications pertinentes au règlement de zonage. Selon l'étude, les ménages qui résident dans les appartements en copropriété présentent des caractéristiques nettement différentes de celles de la population en général de Mississauga. Par exemple, les appartements en copropriété présentaient un taux moyen d'occupation de 1,99 personne par logement, ce qui est nettement plus bas que la moyenne municipale de 3,05 personnes par logement résidentiel.

Toutefois, le règlement actuel de zonage de la ville de Mississauga comprend une norme de deux places de stationnement par logement. À cause de cette norme mal adaptée, selon l'étude, le nombre de places de stationnement dans les immeubles d'appartements en copropriété dans la ville était d'au moins 35 p. 100 supérieur aux besoins réels. À la suite de l'étude, l'Institut a recommandé un certain nombre de révisions au règlement de zonage de Mississauga. Le 30 mai 1994, le conseil municipal de Mississauga a modifié son règlement de zonage et il a réduit les normes régissant le stationnement des appartements en copropriété; cette mesure incorporait un certain nombre de recommandations de l'Institut.

NOTE : *Bilingue/bilingual.*

#### **ENVIRONMENTAL ASSESSMENT GUIDELINES FOR RESIDENTIAL DEVELOPMENT IN THE CITY OF WINNIPEG.**

*Prepared by DS-Lea Consultants Ltd. Ottawa: Canada Mortgage and Housing Corporation, 1993.*

The growing awareness of the residual impacts of past industrial uses of property has led to the creation of legislation at a provincial level to deal with the problem of soil contamination. This report provides an overview of current environmental legislation and regulations in Canada and the United States and comments on the City of Winnipeg's jurisdictional responsibilities for environmental screening processes. In addition, six cities are surveyed to determine municipal involvement in environmental site assessments: Vancouver; Edmonton; Toronto; Hamilton; Montreal; and Halifax.

Of the cities surveyed for this study, with the exception of Toronto which has created an Environmental Protection Office, those municipalities that screen applications limit their involvement to a requirement for a Phase 1 site assessment. If contamination is suspected, the applicant is referred to provincial officials and the municipality usually withholds approval of the application until the province "approves" the site for the proposed use. In light of the growing awareness of the potential liability associated with the development of contaminated lands, the report recommends that the City of Winnipeg adopt policies to screen, for potential soil contamination, all rezoning and subdivision applications which involve a change of use to residential or recreational purposes.

#### **ENVIRONMENTAL SITE ASSESSOR EDUCATION CURRICULUM.**

*Prepared by GlobalTox International Consultants Inc. Prepared for Associated Environmental Site Assessors of Canada Inc., Canada Mortgage and Housing Corporation and the Trust Companies Association of Canada. Toronto: AESAC, 1994.*

At the request of the Associated Environmental Site Assessors of Canada Inc. (AESAC), GlobalTox International Consultants Inc. has prepared a set of two documents to assist AESAC in developing a certification and training program for environmental site assessors. These two documents are complimentary and together present a progressive plan to guide AESAC into its role as the training and accreditation body for environmental site assessors in Canada.

The second of these two documents is this Educational Curriculum. It focuses on the training aspect of AESAC's role in the accreditation of environmental site assessors. A description of the tasks required to complete a Phase I Environmental Site Assessment (ESA) according to the standard of practice recently released by the Canadian Standards Association (CSA) is presented as a starting point. A list of the skills and knowledge required by a qualified environmental site assessor has been drawn up, based on the CSA standard.

There are a number of guidelines and standards other than the CSA standard which describe the execution of environmental site inspections. A review of the differences between these standards and the CSA standard has been prepared. Based on this review, GlobalTox has recommended that AESAC develop a series of supplemental training courses to enable its environmental site assessors to perform these other types of site inspections to their prescribed standards of competence.



# CONTAMINATED LANDS/TERRAINS CONTAMINÉS

## ORGANIZATIONAL STRUCTURE & CERTIFICATION PROGRAM.

*Prepared by GlobalTox International Consultants Inc. Prepared for Associated Environmental Site Assessors of Canada Inc., Canada Mortgage and Housing Corporation and The Trust Companies Association of Canada. Toronto: AESAC, 1994.*

At the request of the Associated Environmental Site Assessors of Canada Inc. (AESAC), GlobalTox International Consultants Inc. has prepared a set of two documents to assist AESAC in developing a certification and training program for environmental site assessors. The standard for Phase I Environmental Site Assessments recently produced by the Canadian Standards Association is the standard of practice to which AESAC wishes to train its members. The first of the two documents produced is this discussion paper which addresses the issues and processes involved in the evaluation of competency of those wishing to be accredited by AESAC as environmental site assessors. Reviews and comparisons of the certification and training programs of various organizations are presented as an overview of the common expectations of organizations similar to AESAC for professional accreditation. The second document, the Educational Curriculum, focuses on the training aspect of AESAC's role in the accreditation of environmental site assessors.

GlobalTox recommends that AESAC should: be structured as a non-exclusive professional organization and accept applicants from a wide variety of backgrounds; adopt a two-tiered system for recognizing environmental site assessors; use the point system to quantify the qualifications of applicants for certification; establish a training program for environmental site assessors; and require re-certification every five years.

## Ongoing Projects/Projets en cours

### FIELD TESTS OF REMEDIAL MEASURES FOR HOUSES AFFECTED BY HAZARDOUS LANDS

#### Objective:

To monitor the effectiveness of remedial measures installed in houses across Canada to prevent hazardous soil gases from entering house air.

#### CMHC Project Officer:

D. Fugler

#### Division:

Research Division

#### Contractor:

CH2M Hill Engineering Ltd.  
180 King Street South  
Suite 600  
Waterloo, Ontario  
N2J 1P8

#### CIDN:

0820 0200001

# COOPERATIVE AND NON-PROFIT HOUSING/ LOGEMENT SANS BUT LUCRATIF ET COOPÉRATIVES

Completed Reports/Rapports terminés

## LES COOPÉRATIVES À CAPITALISATION EN COLOMBIE-BRITANNIQUE : ÉLABORATION ET FONCTIONNEMENT.

*Rédigé par Veronica Doyle. Préparé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1995.*

L'objectif de ce document est d'examiner l'expérience du Lower Mainland en Colombie-Britannique en ce qui concerne la mise sur pied et l'exploitation de coopératives d'habitation à capitalisation. Étant donné que ce mécanisme a été utilisé surtout dans le cas des coopératives d'habitation pour personnes âgées, l'objectif sera de donner de l'information de base sur la possibilité de l'appliquer au logement familial.

L'information contenue dans ce document est tirée de discussions avec des groupes de ressources techniques qui ont mis sur pied des coopératives en C.-B., d'une revue des dossiers de développement et d'entrevues avec des gestionnaires et des membres du conseil d'administration de coopératives d'habitation à capitalisation actuellement en exploitation. Des spécialistes, comme les prêteurs et le personnel de la SCHL, ont également été consultés.

Ce document comprend une introduction, une définition du concept de coopérative, une étude des coopératives d'habitation en général, un examen du mécanisme de la coopérative d'habitation à capitalisation et deux études de cas qui présentent les principaux modèles de coopératives actuelles. Ce sont : la Coopérative d'habitation Crescent Downs à Ladner (C.-B.) et la Coopérative d'habitation Amblevue Place à Vancouver Ouest.

NOTE: Also available in English under the title: Equity Co-operatives in British Columbia: Development and Operation.

## EQUITY CO-OPERATIVES IN BRITISH COLUMBIA: DEVELOPMENT AND OPERATION.

*Prepared by Veronica Doyle. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

The purpose of this paper is to review the experience in the Lower Mainland of B.C. with developing and managing equity housing co-ops. Since this mechanism has been applied primarily to housing developments for seniors, the paper is intended to provide background information for an assessment of the applicability of the model to family housing.

The information in this paper is drawn from discussions with the resource groups that have developed functioning co-ops in B.C., from a review of development files and from interviews with managers and board members of equity co-ops now in operation. Other knowledgeable individuals, such as lenders and CMHC staff, have also been consulted.

This paper consists of an introduction, a definition of the co-operative concept, a discussion of housing co-operatives in general, an examination of the equity co-op mechanism and two case studies representing the major models currently in operation. They are: the Crescent Downs Housing Co-operative in Ladner, B.C. and the Amblevue Place Housing Co-operative in West Vancouver.

NOTE : Aussi disponible en français sous le titre : Les Coopératives à capitalisation en Colombie-Britannique : élaboration et fonctionnement.

# COOPERATIVE AND NON-PROFIT HOUSING/ LOGEMENT SANS BUT LUCRATIF ET COOPÉRATIVES

## Ongoing Projects/Projets en cours

### CONSERVATION DU PATRIMOINE IMMOBILIER COOPÉRATIF

#### Objet :

La recherche a pour thème la conservation du patrimoine immobilier coopératif par l'optimisation des activités d'entretien et de réparations prises en charge par les membres.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Monsieur André Poulin  
École des hautes études  
commerciales  
640 - 333, chemin de la  
Reine-Marie  
Montréal (Québec)  
H3V 1A2

#### NIC :

1281 0200001

### ÉVALUATION DU PROGRAMME PLACEMENT - HABITAT

#### Objet :

Évaluation du programme placement - Habitat retenu aux termes du Programme de subventions de recherche de la SCHL - 1992.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Robert Chagnon et associés  
4209, avenue Oxford  
Montréal (Québec)  
H4A 2Y5

#### NIC :

1085 0200001

### PERTINENCE ET FAISABILITÉ DE LA FORMULE COOPÉRATIVE D'HABITATION - ÉQUITÉ

#### Objet :

Le projet de recherche porte sur la conception et la mise en oeuvre d'un programme d'auto-développement pour le secteur coopératif en habitation.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Madame Marie J. Bouchard  
Centre de gestion des  
coopératives  
École des hautes études  
commerciales  
333, chemin de la  
Reine-Marie, local 640  
Montréal (Québec)  
H3V 1A2

#### NIC :

1084 0200001

### POUR UNE MISE EN MARCHÉ EFFICIENTE DES COOPÉRATIVES D'HABITATION AVEC INVESTISSEMENT DES MEMBRES

#### Objet :

Évaluer le(s) produit(s) d'habitation coopérative dans une perspective marketing, mais aussi, élaborer une méthodologie de lancement de ces nouveaux concepts.

#### Agent de projet pour la SCHL

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Monsieur Guy Ara  
Faculté d'administration  
Université de Sherbrooke  
Sherbrooke (Québec)  
J1K 2R1

#### NIC :

0907 0200001

### TRAINING & NON-PROFIT HOUSING ASSOCIATIONS

#### Objective:

Contribution to create a self-sustaining program to establish a consistent and coherent approach to education and training for staff and volunteer board members of non-profit housing associations across Canada.

#### CMHC Project Officer:

B. Lortie

#### Division:

Programs Sector

#### Contractor:

Canadian Housing and  
Renewal Association  
251 Laurier Avenue West  
Suite 401  
Ottawa, Ontario  
K1A 0P7

#### CIDN:

1467 1501001  
1467 1500001



### BARRIER-FREE AND AUTOMATED DEMONSTRATION HOUSE

#### Objective:

To carry out the design, construction and display of a "barrier-free and automated demonstration house" including production of video material, commentary, and report.

#### MHC Project Officer:

T. Parker

#### Division:

Research Division

#### Contractor:

Adaptable Housing Ltd.  
#4 - 5839 Vine Street  
Vancouver, British Columbia  
V6M 4A2

#### CIDN:

1229 110001

### BARRIER-FREE ENTRANCE DOOR LOCK

#### Objective:

To develop a design for a product "a barrier-free entrance door lock" that will be easy to retro-fit in standard existing doors and be very easy for persons with limited hand strength or dexterity to operate.

#### MHC Project Officer:

M. Macpherson

#### Division:

Research Division  
Housing Technology  
Incentives Program

#### Contractor:

RBO Architecture  
#1 - 730 West 7th Avenue  
Vancouver, British Columbia  
V5Z 1B8

#### CIDN:

1225 0200001

### AN EXPLORATION OF DESIRABILITY OF HOUSING LOCATION BY CONSUMERS OF PSYCHIATRIC SERVICES

#### Objective:

To conduct a focus group comprised of tenants from three types of housing, to conduct 60 semi-structured interviews with tenants in the three aforementioned housing settings.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Ms. Katherine M. Boydell  
Queen Street Mental Health  
Centre  
1001 Queen Street West  
Toronto, Ontario  
M6J 1H4

#### CIDN:

1272 0200001

### FEASIBILITY OF DISABILITY-INTEGRATED, UNIVERSALLY DESIGNED INFILL CO-HOUSING IN AN URBAN SETTING

#### Objective:

To create a document which includes: a model of typical infill co-housing based on current literature and post-occupancy evaluation of existing co-housing developments and their residents, etc.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Mr. David Wetherow  
Executive Director  
Association for Community  
Living  
1706 - 90 Garry Street  
Winnipeg, Manitoba  
R3C 4J4

#### CIDN:

1101 0200001

### UN GUIDE ILLUSTRÉ DE CARACTÉRISTIQUES DE CONCEPTION FAVORISANT L'ACCESSIBILITÉ

#### Objet :

De produire un guide illustré de caractéristiques de conception favorisant l'accessibilité, qui soient adaptables et efficaces par rapport aux coûts tout en pouvant être intégrées dans divers types d'habitations.

#### Agent de projet pour la SCHL :

T. Parker

#### Division :

Division de la recherche

#### Contractant :

Société logique inc.  
3250, boulevard St-Joseph est  
Montréal (Québec)  
H1Y 3G2

#### NIC :

1240 1100001



## DISABLED/HANDICAPÉS

### HOUSING NEEDS OF PEOPLE WITH DISABILITIES

**Objective:**

To provide a profile of the housing characteristics and needs of people with disabilities using data from the 1991 Census and post-censal Health and Activity Limitations Survey (HALS).

**CMHC Project Officer:**

J. Angus

**Division:**

Research Division

**Contractor:**

ARK Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

**CIDN:**

1045 0200003

### HOUSING PEOPLE WITH DISABILITIES

**Objective:**

Updating of the NHA publications #5467 and 5468: Housing Disabled Persons.

**CMHC Project Officer:**

T. Parker

**Division:**

Research Division

**Contractor:**

Associated Planning  
Consultants Inc.  
191 Eglinton Avenue East  
Suite 303  
Toronto, Ontario  
M4P 1K1

**CIDN:**

1298 0200001

### PREPARATION OF TWO REFERENCE GUIDES ON TECHNOLOGY

**Objective:**

To design and write the text for the two reference guides on technology.

**CMHC Project Officer:**

T. Parker

**Division:**

Research Division

**Contractor:**

Roger Dube  
Consulting and Training  
Services  
825 Wilfrid Lavigne  
Aylmer (Québec)  
J9J 1Z2

**CIDN:**

1261 1100001

### **HOUSING AND HOUSING SUPPORT NEEDS IN THE DOWNTOWN CORE OF VANCOUVER.**

*Prepared by Research Team, 411 Seniors' Housing Society. Prepared for Canada Mortgage and Housing Corporation, British Columbia and Yukon Regional Office. Ottawa: CMHC, 1994.*

Between August 1994 to September 1994, the 411 Seniors' Housing Society interviewed 200 residents, aged 50 and over, living in three sub-areas of downtown Vancouver (Central, Downtown Eastside and the West End). The purpose of the survey was to determine the extent of demand for affordable rental housing and to analyze the concerns and needs of elderly residents living in single-room occupancy hotels, rooming houses, apartments, condominiums and houses.

Nearly all of the residents are renters, with an income of less than \$10,000/year, and pay 30% or more of their income to rent. Half of the residents live downtown because it is one of the few places left in the city with low rental accommodation. There is clear evidence of the need for affordable housing; however, there is no indication that residents are in a serious financial crisis. Social housing is strongly desired by residents. Most felt that it would ensure low-rental accommodation, rent control, and standardized management. The central downtown area also needs more residential services. Residents want easier access to grocery markets, pharmacy and medical services, as well as transportation services. Rather than Salvation Army or high-end retail shopping malls, they want retail stores which cater to low-to-middle-income consumers.

The findings of this study emphasize the need for more affordable housing in the downtown core, specifically near 411 Seniors' Centre. The specialized services offered by the Centre, the public amenities within walking distance, the strong support of interviewed residents, and the core location of downtown Vancouver justify residential housing in this area.

### **RÈGLEMENT RÉGISSANT LES PAVILLONS-JARDINS : ÉTUDE DE CAS = REGULATIONS FOR GARDEN SUITES: CASE STUDY.**

*Abordabilité et choix toujours (A.C.T) projet d'étude de cas / Commission du District d'aménagement de Tantramar, Sackville (Nouveau-Brunswick). Préparé par Energy Pathways Inc. Préparé pour la Fédération canadienne des municipalités, L'Association canadienne des constructeurs d'habitations, L'Association canadienne d'habitation et de rénovation urbaine et La Société canadienne d'hypothèques et de logement. Ottawa : Les Associations : La Fédération : La Société, 1994.*

Face au défi de loger un nombre croissant de personnes âgées, la Commission du District d'aménagement de Tantramar, au Nouveau-Brunswick, a déterminé que le pavillon-jardin était un choix viable pour les personnes âgées de la région. La Commission a recommandé aux conseils des trois municipalités de sa juridiction (Sackville, Port Elgin et Dorchester) de modifier leurs plans municipaux et règlements de zonage afin d'autoriser les pavillons-jardins. À l'automne de 1991, Sackville a modifié son plan municipal et son règlement de zonage afin d'autoriser l'utilisation temporaire de pavillons-jardins à condition que ceux-ci satisfassent aux conditions qui seraient énoncées dans une entente d'aménagement. Au cours des deux années suivantes, Port Elgin et Dorchester ont révisé de la même façon leurs plans municipaux et règlements de zonage afin d'autoriser le recours aux pavillons-jardins. Toutefois, le fait de permettre l'utilisation temporaire d'un pavillon-jardin oblige la Commission à renouveler chaque année son autorisation.

## ELDERLY/PERSONNES ÂGÉES

Par conséquent, la Commission a recommandé que les pavillons-jardins soient autorisés sous réserve de certaines conditions. Ainsi, lorsqu'elle approuve la demande initiale d'aménagement d'un pavillon-jardin, la Commission peut émettre un permis qui est renouvelé, les années ultérieures, sur approbation technique des employés de la municipalité. Que les pavillons-jardins soient autorisés de façon temporaire ou conditionnelle, ces méthodes ont permis de simplifier un long processus et de réduire, à un ou deux mois, le temps de traitement d'une demande qui pouvait durer jusqu'à six mois. En outre, l'autorisation conditionnelle permet d'éviter la nécessité de demander chaque année l'autorisation de la Commission.

NOTE : *Bilingue/bilingual.*

### **REGULATIONS FOR GARDEN SUITES: CASE STUDY = RÈGLEMENT RÉGISSANT LES PAVILLONS-JARDINS : ÉTUDE DE CAS.**

*Affordability and Choice Today (A.C.T) Case Study Project / Tantramar Planning District Commission, Sackville, New Brunswick. Prepared by Energy Pathways Inc. Prepared for the Federation of Canadian Municipalities, Canadian Home Builders' Association, Canadian Housing and Renewal Association and Canada Mortgage and Housing Corporation. Ottawa: The Associations: The Federation: The Corporation, 1994.*

Faced with the challenge of housing a growing senior population, the Tantramar Planning District Commission in New Brunswick identified the garden suite as a viable option for seniors in the area. The Commission recommended to the councils of the three municipalities within its jurisdiction (Sackville, Port Elgin and Dorchester) that their municipal plans and zoning by-laws be amended to permit garden suites. In the fall of 1991, Sackville amended its municipal plan and zoning by-law to permit garden suites as a temporary use if they satisfy conditions that would be defined in a development agreement. Over the next two years, Port Elgin and Dorchester also revised their municipal plans and zoning by-laws to permit garden suites. Permitting a garden suite for temporary use, however, requires that the Commission re-approve the unit every year. The Commission recommended, therefore, that garden suites be permitted subject to conditions. With this approach, once development approval is granted by the Commission for the initial garden-suite application, a licence may be issued and renewed in subsequent years upon technical approval by municipal staff. Both the temporary and conditional-use approaches have streamlined an otherwise lengthy approval process for garden suites, reducing the amount of time required to process a garden suite application from as much as six months to one to two months. The conditional-use approach has also eliminated the need to obtain approval from the Commission every year.

NOTE: *Bilingual/bilingue*



## ADAPTING MUNICIPAL HOUSING FOR DEMENTIA

### Objective:

To contribute to an understanding of what housing providers can do to help residents with dementia age in place.

### CMHC Project Officer:

L. Rodriguez

### Division:

Research Division  
External Research Program

### Contractor:

Myra Schiff  
213 - 110 Richmond Street  
East  
Toronto, Ontario  
M5C 2P9

### CIDN:

1286 0200001

## THE CHINESE ELDERLY: SOCIAL INTEGRATION IN METRO HOUSING

### Objective:

A study to ask the ethnic elderly through interviews how they are dealing with their communication needs in an attempt to ascertain the level of congruence between the services being offered and the ethnic composition of the buildings under study.

### CMHC Project Officer:

M. Macpherson

### Division:

Research Division  
External Research Program

### Contractor:

Dr. Morris Saldov  
Ginto Consulting and Research  
2 Kensington Avenue  
Toronto, Ontario  
M5T 2J7

### CIDN:

1285 0200001

## A GUIDE TO PLANNING, DESIGNING, DEVELOPING, MARKETING AND MANAGING HOUSING FOR OLDER CANADIANS

### Objective:

To produce an easy to follow and practical guide document that will assist both non-profit groups and the private sector in planning, designing, developing, marketing and managing a wide range of housing choices for older Canadians.

### CMHC Project Officer:

L. Rodriguez

### Division:

Research Division

### Contractor:

Baycrest Centre for Geriatric Care  
3560 Bathurst Street  
North York, Ontario  
M6A 2E1

### CIDN:

0869 0200001

## HELPING SENIORS AND PEOPLE WITH DISABILITIES MAINTAIN THEIR INDEPENDENCE AT HOME: A GUIDE TO DELIVERING HOME ADAPTATIONS

### Objective:

To produce a how-to guide document which will identify and describe the steps and resources involved in planning, designing, implementing, managing and

marketing a variety of different approaches to delivering home adaptations for seniors and persons with disabilities.

### CMHC Project Officer:

L. Rodriguez

### Division:

Research Division

### Contractor:

University of Manitoba  
Administration Building  
Room 202  
Winnipeg, Manitoba  
R3T 2N2

### CIDN:

1256 0200001  
1256 1100001

## HOUSING OPTIONS FOR CANADIANS WITH DEMENTIA

### Objective:

To produce an easy to follow, illustrated and practical guide document on innovative housing options for people who suffer from dementia.

### CMHC Project Officer:

L. Rodriguez

### Division:

Research Division

### Contractor:

Communitas Consultants  
4550 Beverley Crescent  
Vancouver, British Columbia  
V6J 4E6

### CIDN:

1251 0200001



## ELDERLY/PERSONNES ÂGÉES

### **PRODUCE A COMPUTERIZED SET OF TOOLS THAT WILL ASSIST IN DEVELOPING PROFILES OF THE NEEDS AND PREFERENCES OF SENIORS IN RURAL AREAS**

#### **Objective:**

To improve the current version of "Seniors", examine ways of streamlining the seniors survey questionnaire and the service providers survey questionnaire with a view to improving data collection and entry systems.

#### **CMHC Project Officer:**

L. Rodriguez

#### **Division:**

Research Division

#### **Contractor:**

Tetrad Computer Applications Ltd.  
1145 West Georgia Street  
Vancouver, British Columbia  
V6G 2T3

#### **CIDN:**

0528 0200002

### **REGIONAL SENIORS RESEARCH ACTIVITY - ATLANTIC**

#### **Objective:**

To provide services for the production of a video entitled "Seniors Housing Options".

#### **CMHC Project Officer:**

B. Gray

#### **Division:**

Regional Offices

#### **Contractor:**

Nova Scotia Department of Housing and Consumer Affairs  
P.O. Box 815  
Dartmouth, Nova Scotia  
B2Y 3Z3

#### **CIDN:**

0883 1350002

### **REGIONAL SENIORS RESEARCH ACTIVITY - ATLANTIC**

#### **Objective:**

To test a model in which trades people retired from the construction field, or other interested volunteers, are trained to inform seniors on home adaptations and repairs.

#### **CMHC Project Officer:**

B. Gray

#### **Division:**

Regional Offices

#### **Contractor:**

New Brunswick Department of Municipalities, Culture and Housing  
P.O. Box 6000  
Fredericton, New Brunswick  
E3B 5H1

#### **CIDN:**

0883 1350003

### **STUDY OF THE HOUSING AND SOCIAL NEEDS OF SENIORS IN THE NORTHWEST TERRITORIES**

#### **Objective:**

To study and analyze the needs of aboriginal and non-aboriginal seniors living in the Northwest Territories in order to determine housing and support services requirements, with projections to the year 2005.

#### **CMHC Project Officer:**

B. Gray

#### **Division:**

Research Division

#### **Contractor:**

Treeline Planning Services Ltd  
14 Ptarmigan Road  
Yellowknife, Northwest Territories  
X1A 2W8

#### **CIDN:**

0883 1322001

### RENEWABLES '94: PROCEEDINGS OF THE SOLAR ENERGY SOCIETY OF CANADA: THE ROAD TO PROSPERITY, OCTOBER 30 - NOVEMBER 2, 1994, OTTAWA, CANADA = ÉNERGIES DE REMPLACEMENT 94 : RÉSUMÉS DE LA SOCIÉTÉ D'ÉNERGIE SOLAIRE DU CANADA : SUR LA ROUTE DE LA PROSPÉRITÉ, DU 30 OCTOBRE AU 2 NOVEMBRE 1994, OTTAWA (ONTARIO).

*Sponsored by Canada Mortgage and Housing Corporation, Environment Canada, Industry Canada, National Research Council Canada, Natural Resources Canada, Ontario Hydro, Ontario Ministry of Environment & Energy, Public Works & Government Services Canada and Solar Energy Society of Canada. Ottawa: Solar Energy Society of Canada Inc., 1994.*

NOTE: Available from: Solar Energy Society of Canada, 2415 Holly Lane, Suite 250, Ottawa ON K1V 7P2, Tel.: (613) 523-0974; Fax: (613) 736-8938. Price: \$40.00 which includes GST and \$5.00 postage and handling. Payment by VISA, certified cheque or money order.

The Solar Energy Society of Canada held its 20th Anniversary Conference in Ottawa. Each of the three days of the conference program had a theme which focused on current issues regarding sustainable energy and its practical application. The three principal themes were: sustainable development; renewable energy and buildings; and solar industry opportunities. The technical sessions addressed specific topics such as solar water disinfection, low-energy housing, the effective use of resources, photovoltaics, solar heating and the use of computer simulation. These proceedings reproduce the text of each technical paper delivered at the conference.

NOTE: Includes some text in French.

## Ongoing Projects/Projets en cours

### ASSESS THE INDOOR ENVIRONMENT AND ENERGY CONSUMPTION CHARACTERISTICS OF 8 MID-RISE RESIDENTIAL BUILDINGS

#### Objective:

To analyze energy and air quality in mid-rise residential buildings, through a survey of four midrise residential buildings in both Toronto and Vancouver.

#### MHC Project Officer:

D. Hill

#### Division:

Research Division

#### Contractor:

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### CIDN:

1373 0200001  
1373 0800001

### ENERGY AUDITS OF TEN HIGH-RISE RESIDENTIAL BUILDINGS

#### Objective:

To determine the total energy gain and losses for 10 high-rise buildings across the country.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Housing Innovation Division

#### Contractor:

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

#### CIDN:

1291 0300001

### ENVIRONMENTAL IMPACT STUDY FOR HOUSING ENERGY EFFICIENCY TECHNOLOGY IMPACTS

**Objective:**

To assess the energy efficiency of improved thermal envelope performance and the impact of the envelope changes on the general environment and on indoor air quality.

**CMHC Project Officer:**

T. Hamlin

**Division:**

Research Division  
Panel on Energy Research  
and Development

**Contractor:**

SAR Engineering Limited  
8884 - 15th Avenue  
Burnaby, British Columbia  
V3N 1Y3

**CIDN:**

0847 0200001  
0847 0201001

### HEAT, AIR, AND MOISTURE TRANSFER IN HIGH-RISE BUILDING ENVELOPES

**Objective:**

To develop design guidelines for energy efficiency and durability of wall structures and roofing systems of residential high-rise buildings.

**CMHC Project Officer:**

D. Hill

**Division:**

Research Division

**Contractor:**

National Research Council  
Building M-20  
Montreal Road  
Ottawa, Ontario  
K1A 0R6

**CIDN:**

0719 0200001  
0719 0201001

### PRECALCULATION OF THERMAL PERFORMANCE VALUES FOR TABLES IN THE 1995 NATIONAL ENERGY CODE

**Objective:**

To precalculate thermal performance values of building assemblies for the National Energy Code for Buildings 1995 and the National Energy Code for Houses 1995.

**CMHC Project Officer:**

W. Webster

**Division:**

Research Division

**Contractor:**

Enermodal Engineering  
Limited  
368 Phillip Street  
Waterloo, Ontario  
N2L 5J1

**CIDN:**

1387 0200001

**HEALTHY MATERIALS: A COMMUNIQUE ON MATERIAL EMISSION TESTING AND STANDARDS ACTIVITIES.**

*Issue No. 2. Ottawa: Canada Mortgage and Housing Corporation, Fall 1994.*

In this second issue, Healthy Materials continues its focus on emission testing and standards development with articles on the recent ASTM Symposium, current European activities, EPA's latex paint study and the National Particleboard Association's test house program. Highlights are also provided of the October meeting of the Task Force on Material Emissions. Canadian manufacturers and designers looking for material testing facilities will find the survey of Canadian test labs useful. The applications section features two American projects - the San Francisco Main Library and the Audubon office in New York.

NOTE : Aussi disponible en français sous le titre : Matériaux sains : un bulletin sur les activités relatives aux essais et aux normes d'émission des matériaux.

**MAISON DE RECHERCHE POUR LES PERSONNES HYPERSENSIBLES AUX POLLUANTS ENVIRONNEMENTAUX : DESCRIPTION ET DÉTAILS TECHNIQUES (LNH 6797).**

*Ottawa : Société canadienne d'hypothèques et de logement, 1994.*

Depuis des années, la SCHL constate que certaines personnes, handicapées par des problèmes d'hypersensibilité aux polluants environnementaux, ont des besoins particuliers en matière de logement. Cette publication décrit la maison de recherche de la SCHL qui a été réalisée dans le but de créer un milieu intérieur sain tout en abaissant le coût du logement pour des personnes hypersensibles aux polluants environnementaux ou souffrant d'allergies et de maladies respiratoires. Il a été possible d'assainir l'air de cette maison grâce à des matériaux choisis minutieusement et à une installation de ventilation de qualité supérieure. Tous les matériaux de la maison se vendent chez les marchands de construction. L'installation de ventilation prototype a été conçue en vue de mettre à l'essai une série de caractéristiques que ne comporte encore aucun appareil de ventilation. On espère que des fabricants s'intéresseront à commercialiser un système intégrant les caractéristiques particulières de cette installation.

NOTE: Also available in English under the title: Research House for the Environmentally Hypersensitive: Description and Technical Details (NHA 6796).



## ENVIRONMENTAL POLLUTION AND CONTROL/ POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

### **MATÉRIAUX SAINS : UN BULLETIN SUR LES ACTIVITÉS RELATIVES AUX ESSAIS ET AUX NORMES D'ÉMISSION DES MATÉRIAUX. NO. 2.**

*Ottawa : Société canadienne d'hypothèques et de logement, automne 1994.*

Dans ce deuxième numéro, Matériaux sains se concentre encore sur les essais sur les émissions et l'élaboration de normes en proposant des articles sur le récent Colloque de l'ASTM, les activités en cours en Europe, une étude sur la peinture au latex effectuée par l'EPA et le programme des installations d'essai de la National Particleboard Association. On y présente également les faits saillants de la réunion d'octobre du Groupe de travail sur les émissions des matériaux. Les concepteurs et fabricants canadiens à la recherche d'installations d'essais de matériaux apprécieront l'étude sur les laboratoires canadiens. La section portant sur l'utilisation de matériaux à faible taux d'émission présente deux projets américains, soit la bibliothèque de San Francisco et les bureaux de Audubon à New York.

NOTE: Also available in English under the title: Healthy Materials: A Communiqué on Material Emission Testing and Standards Activities.

### **RESEARCH HOUSE FOR THE ENVIRONMENTALLY HYPERSENSITIVE: DESCRIPTION AND TECHNICAL DETAILS (NHA 6796).**

*Ottawa: Canada Mortgage and Housing Corporation, 1994.*

CMHC has for years recognized the special housing needs of individuals disabled by environmental hypersensitivities. This publication describes the CMHC research house which was designed and constructed to achieve a clean indoor environment while reducing the cost of housing for people who are environmentally hypersensitive or suffer from allergies and respiratory diseases. The cleanliness of the air has been achieved through the careful selection of materials and superior ventilation. All the materials in the house are available through building merchants. The prototype ventilation system was developed to test a combination of features not yet available in any single ventilation appliance. It is hoped that its unique combination of features will be recognized by manufacturers as the basis for a commercially available unit.

NOTE : Aussi disponible en français sous le titre : Maison de recherche pour les personnes hypersensibles aux polluants environnementaux : description et détails techniques (LNH 6797).

# **ADVICE ON THE DRAFTING OF EMISSION TEST STANDARDS**

## **Objective:**

Provide specific advice on improving three draft emission test standards.

## **CMHC Project Officer:**

J. White

## **Division:**

Research Division

## **Contractor:**

Stewart S. Fritts  
2415 Lazybrook  
Houston, Texas  
77008

## **CIDN:**

0200002

# **CONCENTRATIONS DE RADON-222 AU QUÉBEC**

## **Objet :**

Évaluer les concentrations moyennes annuelles de radon présentées dans un échantillon représentatif de résidences dans la province de Québec.

## **Responsable de projet pour la SCHL :**

M. Macpherson

## **Division :**

Division de la recherche  
Programme de subventions de recherche

## **Contractant :**

Monsieur Benoît Lévesque  
Centre hospitalier de  
l'université Laval  
2050, boul. René-Lévesque  
ouest  
Ste-Foy (Québec)  
G1V 2K8

## **CIDN :**

0915 0200001

# **DEVELOPING TOOLS FOR MEASURING THE PERFORMANCE OF MOLD-TROUBLED HOUSING**

## **Objective:**

To develop tools for measuring the performance of mold-troubled housing.

## **CMHC Project Officer:**

J. White

## **Division:**

Research Division

## **Contractor:**

Appin Associates  
472 Academy Road  
2nd Floor  
Winnipeg, Manitoba  
R3N 0C7

## **CIDN:**

1243 0200002

# **DEVELOPMENT OF A MECHANICAL SYSTEM FOR A RESIDENTIAL CLEAN HOME**

## **Objective:**

To determine the best mechanical system or systems that will provide heating and ventilation for the "clean" addition to an existing house.

## **CMHC Project Officer:**

V. Salares

## **Division:**

Research Division

## **Contractor:**

Drerup-Armstrong Ltd.  
P.O. Box 130  
Carp, Ontario  
K0A 1L0

## **CIDN:**

1213 1100001  
1213 1101001

# **THE DEVELOPMENT OF A TRAINING PROGRAM FOR INDOOR AIR QUALITY HOUSE EXPERTS**

## **Objective:**

Development of a training program for IAQ house experts; delivery of the pilot course; evaluation of the pilot course; exploration of future administrators of the program.

## **CMHC Project Officer:**

V. Salares

## **Division:**

Research Division

## **Contractor:**

Jools Development  
P.O. Box 69  
Quadeville, Ontario  
K0J 2G0

## **CIDN:**

1302 1100001

# **EMISSION TESTING OF SELECTED BUILDING MATERIALS**

## **Objective:**

To conduct emission tests on groups of selected building materials (caulks, sealants, urethane foam, and pressed wood products).

## **CMHC Project Officer:**

V. Salares

## **Division:**

Research Division

## **Contractor:**

National Research Council  
Institute for Research in  
Construction  
Montreal Road  
Ottawa, Ontario  
K1A 0R6

## **CIDN:**

0964 1100002

## ENVIRONMENTAL POLLUTION AND CONTROL/ POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

### AN EVALUATION OF THE BARRHAVEN HOUSING PROJECT

#### Objective:

To undertake an evaluation of the Barrhaven housing project, a housing project in Ottawa, Ontario designed for the environmentally hyper-sensitive; to survey the occupants and landlord to assess whether their needs are being met and what advantages or limitations are encountered with this type of housing.

#### CMHC Project Officer:

V. Salares

#### Division:

Research Division

#### Contractor:

Flett Consulting Groups Inc.  
130 Slater Street, Suite 750  
Ottawa, Ontario  
K1P 6E2

#### CIDN:

1323 0200001  
1323 1100001

### AN EVALUATION OF THE SCREENING MEASUREMENT AS AN INDICATOR OF AVERAGE ANNUAL INDOOR RADON EXPOSURE

#### Objective:

Assess the short term screening measurement as an indicator of the average annual radon levels in homes.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Michael W.R. LaFontaine  
LaFontaine Consulting  
Services  
106 Krug Street  
Kitchener, Ontario  
N2H 2X9

#### CIDN:

1276 0200001

### EXTERNAL REVIEW OF CMHC PROJECT ON EMF (ELECTROMAGNETIC FIELDS) IN CANADIAN HOUSING

#### Objective:

To provide an external specialist review of CMHC's exploratory survey project on EMF in Canadian housing which will include a literature review, a field survey of 25 Canadian houses, and a final report.

#### CMHC Project Officer:

C. Ives

#### Division:

Research Division

#### Contractor:

Dr. Paul Heroux  
McGill University School of  
Occupational Health  
1130 Pine Avenue West  
Montreal (Québec)  
H3A 1A3

ENERGETICS Inc.  
7164 Columbia Gateway Drive  
Columbia, MD  
21046

#### CIDN:

1051 0200003  
1051 0200002

### GOOD HOUSES, BAD HOUSES, WALLACEBURG PHASE II

#### Objective:

A study of the performance of houses and the health of people in them.

#### CMHC Project Officer:

J. White

#### Division:

Research Division

#### Contractor:

Morrison Hershfield Limited  
4 Lansing Square  
North York, Ontario  
M2J 1T1

#### CIDN:

1368 02401

### GUIDE TO MECHANICAL EQUIPMENT FOR HEALTHY INDOOR ENVIRONMENTS

#### Objective:

To develop a guide to mechanical equipment for healthy indoor environments covering heating, cooling, ventilating and air purification equipment.

#### CMHC Project Officer:

V. Salares

#### Division:

Research Division

#### Contractor:

Habitat Design & Consulting  
Ltd.  
1662 West - 75th Avenue  
Vancouver, British Columbia  
V6P 6G2

#### CIDN:

1367 0200001



## **MECHANICAL SYSTEM FOR THE CMH4C HOUSE**

### **Objective:**

To supply a prototype mechanical system for a prefab house designed specifically for people who are environmentally hypersensitive.

### **CMHC Project Officer:**

P. Russell

### **Division:**

Research Division

### **Contractor:**

Geddes Enterprises  
45 Massey Lane  
Bramalea, Ontario  
L6S 2V8

### **CIDN:**

0928 1103001

## **A PLANNING MODEL FOR ESTIMATION OF PHOSPHORUS LOADING FROM ON-SITE SYSTEMS**

### **Objective:**

A systematic examination of the variables that may control phosphorus contributions to lakes. The model will recognize loadings leaving an on-site system, differences between failed systems and normal operation, geology, and soils.

### **CMHC Project Officer:**

M. Macpherson

### **Division:**

Research Division  
External Research Program

### **Contractor:**

Dr. Donald H. Waller  
Technical University of N.S.  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

### **CIDN:**

0918 0200001

## **PROTOCOL FOR RESIDENTIAL INDOOR AIR QUALITY INVESTIGATIONS**

### **Objective:**

Develop a protocol or expert system to assist in the analysis of problems associated with unhealthy or hazardous residential buildings. The research will identify and investigate several buildings in the Ottawa area to test and improve the protocol.

### **CMHC Project Officer:**

M. Macpherson

### **Division:**

Research Division  
External Research Program

### **Contractor:**

George E. Vandrish  
Research Director  
Instruscience Limited  
484 Gladstone Avenue  
Ottawa, Ontario  
K1R 5N8

### **CIDN:**

0926 0200001

## **SOIL GASES IN HIGH-RISE APARTMENT BUILDINGS**

### **Objective:**

To investigate how soil gases enter high-rise apartment buildings, and to see whether underground parking structures act as a barrier to soil gas entry.

### **CMHC Project Officer:**

D. Fugler

### **Division:**

Research Division

### **Contractor:**

Jacques Whitford  
Environment Limited  
2781 Lancaster Road  
Suite 200  
Ottawa, Ontario  
K1B 1A7

### **CIDN:**

1374 0200001

## **STUDY OF THE HOUSING NEEDS OF THE ENVIRONMENTALLY HYPERSENSITIVE-SOCIO- ECONOMIC/HEALTH FACTORS**

### **Objective:**

To conduct a survey, sampling various regions of the country, to document the socio-economic characteristics and the perceived housing-related needs of environmentally hypersensitive people who are intending to or who would like to make housing changes.

### **CMHC Project Officer:**

V. Salares

### **Division:**

Research Division

### **Contractor:**

Ekos Research Associates Inc.  
275 Sparks Street  
Suite 801  
Ottawa, Ontario  
K1R 7X9

### **CIDN:**

1257 1100001  
1257 1101001



## ENVIRONMENTAL POLLUTION AND CONTROL/ POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

### **SURVEY OF ADVERSE HEALTH EFFECTS OF MOULD EXPOSURE**

#### **Objective:**

To support the survey called "The Respiratory Health Effects of Indoor Moulds". This study will look at about 500 houses to identify how much biologically-active material there is in house air and dust. Frequency of cough will also be measured and compared to parental reports. In the final phase, the health of occupants will be assessed as well as the reasons for moisture problems in 100 of the houses.

#### **CMHC Project Officer:**

J. White

#### **Division:**

Research Division

#### **Contractor:**

Health and Welfare Canada  
Bureau of Chemical Hazards  
Environmental Health Centre  
Room 130, Tunney's Pasture  
Ottawa, Ontario  
K1A 0L2

#### **CIDN:**

0843 0201001

### **A SURVEY OF ELECTROMAGNETIC FIELD LEVELS IN CANADIAN HOUSING**

#### **Objective:**

To review the state-of-the-art in knowledge and housing research into EMF and prepare an interim report, to conduct a field survey of EMF levels in representative housing, and to prepare a report on the findings with recommendations for remedial measures.

#### **CMHC Project Officer:**

C. Ives

#### **Division:**

Research Division

#### **Contractor:**

The Planetary Association for  
Clean Energy Inc.  
100 Bronson Avenue  
Suite 1001  
Ottawa, Ontario  
K1T 6G8

#### **CIDN:**

1051 0200001

#### **CE QU'ON A ENTENDU : LA PRÉVENTION DE LA VIOLENCE FAMILIALE ET LE LOGEMENT : RAPPORT DE CONSULTATION.**

*Préparé par G. Weisz et T. van den Boogaard. Ottawa : Groupe des lignes de conduite pour le logement social, Division de l'élaboration de propositions, Société canadienne d'hypothèques et de logement, 1994.*

Au printemps de 1994, la SCHL a procédé à une consultation dans tout le Canada dans le cadre d'un vaste effort d'élaboration d'une stratégie intégrée visant à combattre et à prévenir la violence dans la société. Ce rapport contient le résumé des commentaires et des conseils de près de 200 participants aux discussions et des mémoires écrits sur les sujets suivants : les options de logement pour les femmes violentées; la nécessité des refuges; les besoins de logement des groupes spéciaux ou mal servis tels que les personnes handicapées, les groupes ethnoculturels, les Autochtones, les enfants et les aînés; et le rôle du logement par rapport au développement communautaire.

NOTE: Also available in English under the title: What We Heard : Family Violence Prevention and Housing.

#### **WHAT WE HEARD: FAMILY VIOLENCE PREVENTION AND HOUSING: CONSULTATION REPORT.**

*Prepared by G. Weisz and T. van den Boogaard. Ottawa: Social Housing Policy Group, Policy Development Division, Canada Mortgage and Housing Corporation, 1994.*

In the spring of 1994, CMHC conducted a Canada-wide consultation as part of a broader effort to develop an integrated strategy to address and prevent violence in society. This report summarizes the issues and advice received from the nearly 200 consultation discussants and written submissions on the following topics: housing options for abused women; the need for emergency shelters; housing issues for people with special needs such as persons with disabilities, ethnocultural groups, aboriginal peoples, children and seniors; and the role of housing in community development.

NOTE : Aussi disponible en français sous le titre : Ce qu'on a entendu : la prévention de la violence familiale et le logement.

## Completed Reports/Rapports terminés

### THE EFFECTS OF GLASS DOORS ON MASONRY FIREPLACE SPILLAGE AND SURFACE TEMPERATURES.

*Prepared by David J. Honeycutt, Dennis R. Jaasma and Curtis H. Stern. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

A single masonry fireplace was retrofitted with glass doors to examine their impact on fireplace safety. Two test series were performed. The first examined the effect glass doors had on fireplace spillage. The second examined the effect glass doors had on fireplace temperatures.

The first series of tests was composed of fifteen spillage tests in which the door air leakiness and external air supply opening were varied. For these tests a chamber designed to maintain a constant level of depressurization was constructed around the fireplace to allow simulation of house depressurization. Fireplace spillage was monitored by measuring carbon monoxide concentrations in air exhausted from the spillage chamber.

The second series consisted of nine fire safety tests. Temperatures were measured on both the interior and exterior of the fireplace. Exterior temperatures were measured at buried member, exposed surface, and glass door locations. Interior temperatures were measured on the firebox walls and in the flue gas. The influence of the glass doors was altered for each test by adjusting the leakiness, the leak location, or the length of time the doors were open.

Spillage was reduced substantially with the use of glass doors. However, tighter glass doors did not always give further reductions in spillage. Increasing the size of the external air supply also did not consistently reduce spillage. Further testing would be necessary to clarify the dependence of spillage on door leakiness and air supply opening. Buried member and glass door temperatures measured during closed-door tests were only moderately higher than those reached during open, then closed-door, tests. For the fireplace tested, these elevated temperatures did not appear to be a safety hazard.

NOTE : Aussi disponible en français sous le titre : *Effets de portes vitrées sur les émanations et les températures de surface d'un foyer en maçonnerie.*

## **EFFETS DE PORTES VITRÉES SUR LES ÉMANATIONS ET LES TEMPÉRATURES DE SURFACE D'UN FOYER EN MAÇONNERIE.**

*Préparé par David J. Honeycutt, Dennis R. Jaasma et Curtis H. Stern. Préparé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994.*

Des portes vitrées ont été posées sur un foyer à feu ouvert en maçonnerie dans le but d'examiner leur incidence sur la sécurité du foyer. Deux séries d'essais ont été réalisées. La première visait à étudier l'effet des portes vitrées sur les émanations des gaz de combustion dégagées par le foyer, alors que la seconde avait trait à l'effet des portes vitrées sur l'élévation de la température dans le foyer.

Durant la première série d'essais, les chercheurs ont réalisé quinze essais d'émanations pour lesquels ils ont varié l'étanchéité à l'air des portes ainsi que l'apport d'air comburant extérieur. Pour ce faire, ils ont construit, autour d'un foyer à feu ouvert, un caisson d'essai conçu pour maintenir un niveau constant de dépressurisation afin de simuler la dépressurisation qui se produit à l'intérieur d'une maison. Les émanations des gaz de combustion ont été contrôlées en mesurant les concentrations de monoxyde de carbone dans l'air évacué du caisson d'essai.

Pour la seconde série, neuf essais de sécurité ont été menés. Les températures ont été mesurées à l'intérieur et à l'extérieur du foyer. Les températures extérieures ont été mesurées sur des éléments cachés, sur les surfaces découvertes et sur les portes vitrées. Les températures intérieures ont été mesurées sur les parois de la chambre de combustion et dans le conduit de fumée. L'effet des portes vitrées a été modifié à chaque essai en réglant l'étanchéité à l'air, les zones de fuites d'air ou la durée d'ouverture des portes.

Les portes vitrées ont réduit considérablement les émanations. Cependant, l'accroissement de l'étanchéité des portes n'a pas toujours permis de réduire davantage les émanations. L'augmentation de la section des orifices de prise d'air extérieur ne permet pas non plus de réduire les émanations de façon constante. Il faudrait mener des essais plus complets pour déterminer avec certitude le rôle que jouent l'étanchéité à l'air des portes et les prises d'air dans la production d'émanations. Les températures mesurées sur les éléments cachés et sur les portes vitrées pendant les essais à portes fermées ont été seulement un peu plus élevées que celles obtenues lors des essais à portes ouvertes puis fermées. Dans le cas du foyer mis à l'essai, ces températures élevées n'ont pas semblé représenter un risque sur le plan de la sécurité.

NOTE: Also available in English under the title: *The Effects of Glass Doors on Masonry Fireplace Spillage and Surface Temperatures.*



## HEATING/CHAUFFAGE

### Ongoing Projects/Projets en cours

**DEVELOP DESIGN  
GUIDELINES FOR HEATING  
AND VENTILATING SYSTEMS  
IN MULTI-UNIT  
RESIDENTIAL BUILDINGS**

**Objective:**

To improve the installation and operating characteristics of the energy consuming systems in high-rise residential structures.

**CMHC Project Officer:**

W. Webster

**Division:**

Research Division

**Contractor:**

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K1A 0M8

**CIDN:**

1042 0200001

# HIGH-RISE CONSTRUCTION/ CONSTRUCTION D'IMMEUBLES DE GRANDE HAUTEUR

## Ongoing Projects/Projets en cours

### THE INTEGRATED HIGH-RISE BUILDING ENVELOPE IDEAS CHALLENGE COMPETITION

#### Objective:

Planning, development and execution of a design competition for high-rise building technology, and a comprehensive communications and promotional plan, and fundraising plan and the execution of these activities.

#### CMHC Project Officer:

S. Marshall

#### Division:

Housing Innovation Division

#### Contractor:

Energy Technology Access  
Group Inc.  
110 - 2103 Airport Drive  
Saskatoon, Saskatchewan  
S7L 6W2

#### CIDN:

1326 0300001

### DEVELOPMENT OF A COMMISSIONING PLAN FOR THE WINNERS OF THE IDEAS CHALLENGE

#### Objective:

Develop a plan for commissioning the building envelope for thermal performance, airtightness and water penetration control to be utilised by the winners of the IDEAS Challenge.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Housing Innovation Division

#### Contractor:

Morrison Hershfield Limited  
2440 Don Reid Drive  
Ottawa, Ontario  
K1H 8P5

#### CIDN:

0840 0306001

### IDEAS CHALLENGE - MONITORING PLAN

#### Objective:

To develop a plan for monitoring the building envelope for thermal performance, airtightness and water penetration control to be utilised by the winners of the IDEAS Challenge.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Housing Innovation Division

#### Contractor:

Quirouette Building  
Specialists Limited  
18 Crispin Private  
Ottawa, Ontario  
K1H 8P5

#### CIDN:

0840 0306003

### INDUSTRY GUIDELINES ON THE COMPARTMENTALIZING OF THE PRESSURE EQUALIZED CAVITY

#### Objective:

To produce industry guidelines on the compartmentalizing of the pressure equalized cavity.

#### CMHC Project Officer:

P.-M. Busque

#### Division:

Housing Innovation Division

#### Contractor:

Boundary Layer Wind Tunnel  
Laboratory  
University of Western Ontario  
London, Ontario  
N6A 5B9

#### CIDN:

1123 0300002

### INVESTIGATE THE EFFECTS OF COMPARTMENTALIZING APARTMENTS OF HIGH-RISE BUILDINGS TO REDUCE STACK PRESSURES

#### Objective:

To carry out a study to investigate the effects of compartmentalizing apartments of high-rise buildings to reduce stack pressures.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Housing Innovation Division

#### Contractor:

Morrison Hershfield Limited  
2440 Don Reid Drive  
Ottawa, Ontario  
K1H 8P5

#### CIDN:

1331 0300001

## HIGH-RISE CONSTRUCTION/ CONSTRUCTION D'IMMEUBLES DE GRANDE HAUTEUR

### OPERATING COST PROFILES IN MULTI-UNIT RESIDENTIAL BUILDINGS

**Objective:**

To obtain operating cost profiles in Canadian multi-unit residential buildings.

**CMHC Project Officer:**

W. Webster

**Division:**

Research Division

**Contractor:**

Real Estate Institute of  
Canada  
305-2200 Lakeshore Blvd.  
West  
Toronto, Ontario  
M8V 1A4

**CIDN:**

1024 0200001

### OPERATING COST PROFILES IN MULTI-UNIT RESIDENTIAL BUILDINGS

**Objective:**

To obtain operating cost profiles in Canadian multi-unit residential buildings.

**CMHC Project Officer:**

W. Webster

**Division:**

Research Division

**Contractor:**

BOMA Canada  
#2012 - 20 Queen Street West  
Toronto, Ontario  
M5H 3R2

**CIDN:**

1024 0200002

### OPERATING MECHANICAL AND ELECTRICAL EQUIPMENT AND SYSTEMS IN MEDIUM AND HIGH-RISE RESIDENTIAL BUILDINGS

**Objective:**

To develop reference documents and training materials for operating mechanical and electrical equipment and systems in medium and high-rise residential buildings.

**CMHC Project Officer:**

W. Webster

**Division:**

Research Division

**Contractor:**

Efficiency Engineering  
Incorporated  
978 Mary Avenue  
Cambridge, Ontario  
N3H 4N5

**CIDN:**

1250 0200001

## HOME AUTOMATION/HABITATIONS – AUTOMATISATION

### Ongoing Projects/Projets en cours

#### **A STUDY TO IDENTIFY COMMERCIALLY FEASIBLE RESIDENTIAL AUTOMATION PRODUCTS AND STRATEGIES**

##### **Objective:**

To organize two workshops in Ottawa to identify salient technical issues as a necessary background for subsequent interviews and to analyse this information in conjunction with subsequent workshops, interviews and focus groups to produce a report.

##### **CMHC Project Officer:**

A. Houston

##### **Division:**

Research Division

##### **Contractor:**

Canadian Automated Building  
Association (CABA)  
1200 Montreal Road  
Building M-20  
Ottawa, Ontario  
K1A 0R6

##### **CIDN:**

1254 020001



### Ongoing Projects/Projets en cours

#### **AN EXAMINATION OF THE FEASIBILITY OF DEVELOPING A CANADIAN HOMEOWNER'S MANUAL**

##### **Objective:**

To determine whether the development of a homeowner's manual is a feasible and appropriate undertaking for CMHC and, if so, identify the most effective ways in which it can be produced and delivered and maintained.

##### **CMHC Project Officer:**

F. Grammenos

##### **Division:**

Research Division

##### **Contractor:**

Reid/Foster Associates  
55 Rosebery Avenue  
Ottawa, Ontario  
K1S 1W1

##### **CIDN:**

1314 0200001

### Ongoing Projects/Projets en cours

#### **ESTIMATING HOMELESSNESS**

##### **Objective:**

To develop a methodology for estimating the number of homeless people in individual cities/areas.

##### **CMHC Project Officer:**

J. Angus

##### **Division:**

Research Division

##### **Contractor:**

P. Lynn McDonald  
Centre for Applied Social  
Research  
Faculty of Social Work  
University of Toronto  
246 Bloor Street West  
Toronto, Ontario  
M5S 1A1

##### **CIDN:**

1247 0200001

#### **THE HOUSING NEEDS OF HOMELESS CANADIANS**

##### **Objective:**

To collect data from shelters, hostels, social agencies, private agencies, and public sources in the Toronto area.  
To interview homeless persons as well as those who work with the homeless.

##### **CMHC Project Officer:**

J. Engeland

##### **Division:**

Research Division  
External Research Program

##### **Contractor:**

Dr. Thomas Fleming  
Department of Sociology and  
Anthropology  
University of Windsor  
Windsor, Ontario  
N9B 3P4

##### **CIDN:**

0748 0200001

## HOUSE CONSTRUCTION/ HABITATIONS - CONSTRUCTION

### Completed Reports/Rapports terminés

#### **DEFECT PREVENTION RESEARCH PROJECT FOR PART 9 HOUSES (REV. ED).**

*Prepared by Proctor & Redfern Limited and Ontario New Home Warranty Program.  
Ottawa: Canada Mortgage and Housing Corporation, 1994.*

The purpose of the Defect Prevention Research Project was to identify the main types of construction defects and try to correlate them with corresponding building systems or design and construction practices. Data was collected using approximately 100 active claim files available at the Ontario New Home Warranty Program Regional Offices. These files contained information on over 1000 claim items compiled by Warranty Representatives regarding problem complaints, causes and resolution. In all cases the repair costs were also listed.

Extensive studies of the data and cross-comparisons have been completed and provide relevant information leading to recommendations for improving the design standards and construction supervision of single-family residential construction. The results of the study show that small builders in small municipalities contribute to the most costly defects to the Warranty Program. Foundations, interior finish, and plumbing are the most problematic construction sequence areas for both of these groups. The study also proves that workmanship defects far exceed all other claims in terms of both cost and frequency, followed by Ontario Building Code violations, water penetration claims, major structural defects, material claims, and lastly, substitution claims.

NOTE : Aussi disponible en français sous le titre : Projet de recherche sur la prévention des vices de construction des habitations visées par la Partie IX.

#### **ISO 9000 AND THE RESIDENTIAL CONSTRUCTION INDUSTRY: DISCUSSION PAPER.**

*Prepared by Hussein Rostum, NGL Nordicity Group Ltd. Prepared for Canada Mortgage and Housing Corporation and Science and Technology Sector, Industry Canada. Ottawa: CMHC, Centre for Future Studies in Housing and Living Environments, 1994.*

ISO 9000 is the international set of quality management standards for organizing and controlling operations to achieve quality results in products and services. The objective of this study was to identify the state of ISO 9000 worldwide and in Canada, how ISO 9000 could be applied to the residential construction industry, and a possible role for federal and provincial housing agencies in promoting this quality management system in Canada. Through the documentation of written materials and a number of personal and telephone interviews, the study demonstrates the popularity of these standards in industries worldwide. However, the adoption of these standards in the residential construction industry in Canada is not as advanced.

Nevertheless, the report identifies a complimentary role between ISO 9000 series and existing standards in the residential construction industry. ISO 9000 provides a recognized international standard for introducing quality as well as safety, and offers some protection against risk and liability to builders and manufacturers of housing products. An appropriate application within the industry is manufactured housing products where the industry is expanding its export potentials in the United States, Japan, and several other countries in Europe. ISO 9000 certification would potentially enhance this industry's international competitiveness as Canadian manufactured housing products gain access to international markets.

The report also identifies other potential benefits and applications within the residential construction industry including: streamlining regulatory requirements; supporting home warranty programs; reducing multiple inspection and testing prerequisites; and streamlining supplier-contractor and sub-contractor relationships in the industry.

## **PROJET DE RECHERCHE SUR LA PRÉVENTION DES VICES DE CONSTRUCTION DES HABITATIONS VISÉES PAR LA PARTIE IX (ÉD. REV.).**

*Rédigé par Proctor & Redfern Ltée et le Régime de garanties des logements neufs de l'Ontario. Ottawa : Société canadienne d'hypothèques et de logement, 1994.*

Le Projet de recherche sur la prévention des vices de construction avait pour objet de recenser les principaux types de vices, puis d'établir une corrélation avec les systèmes de construction et les règles de calcul ou de construction y afférents. Des données ont été glanées dans une centaine de dossiers actifs de réclamation provenant des bureaux régionaux du Régime de garanties des logements neufs de l'Ontario. On y a découvert plus de mille éléments de réclamation totalisés par les préposés aux réclamations au regard des plaintes, de leurs causes et des correctifs appliqués. Les frais de réparation étaient indiqués dans tous les cas.

L'analyse exhaustive des données et les comparaisons ayant été faites, on possède l'information nécessaire pour formuler des recommandations visant à améliorer les normes de calcul et le contrôle immédiat de la construction des habitations individuelles. L'analyse a révélé que ce sont les petits constructeurs dans les petites villes qui sont responsables des vices qui coûtent le plus cher au régime de garanties. Les fondations, la finition intérieure et la plomberie sont les secteurs les plus problématiques pour ces deux groupes, dans cet ordre. Elle a aussi prouvé que les défauts de fabrication surpassent de beaucoup toutes les autres réclamations tant sur le plan du coût que de l'incidence, après quoi viennent les infractions au Code du bâtiment de l'Ontario, la pénétration d'eau, les défauts structuraux majeurs, les matériaux et, enfin, les substitutions.

NOTE: Also available in English under the title: Defect Prevention Research Project for Part 9 Houses.



### Ongoing Projects/Projets en cours

#### **A.Q.M.E. STUDY TOUR OF EUROPE - NOVEMBER, 1992**

##### **Objet :**

Cette aide est accordée pour la production d'un rapport analytique fondé sur les observations des participants au voyage d'études en question.

##### **Agent de projet pour la SCHL :**

P. Spurr

##### **Division :**

Relations internationales

##### **Contractant :**

Assoc. Québécoise pour la maîtrise de l'énergie  
5, place Ville-Marie  
Bureau 903, 9-étage  
Montréal (Québec)  
H3B 2G2

##### **NIC :**

1055 0900001

#### **THE CANADIAN EXPERIENCE TO DATE WITH HOUSING RELATED SAFETY AUDIT TOOLS**

##### **Objective:**

This research project is intended to examine the issue of personal security and housing through two sub projects. The first project involves the development of a status paper of the current work being done by various groups in the development and use of housing-related safety audit tools. The second will provide a critical review of the work done on housing-related safety and security standards.

##### **CMHC Project Officer:**

J. Taggart

##### **Division:**

Strategic Planning and Policy  
Development Division

##### **Contractor:**

The Women's Action Centre  
Against Violence  
1206-170 Laurier Avenue West  
Ottawa, Ontario  
K1P 5V5

##### **CIDN:**

1299 0100001

#### **FUTURE ECONOMIC CONDITIONS AND THE HOUSING SECTOR**

##### **Objective:**

To study the potential impacts of various scenarios of long term economic conditions, including the possibility of deflation, for the housing sector. The research will include a review of the general conditions associated with continued slow economic growth and deflationary contraction and pay special attention to the behaviour of households, the housing industry and financial institutions in such contexts. Through the development of scenarios of future economic conditions, the study will explore the implications for various components of the housing sector.

##### **CMHC Project Officer:**

D. Chamberland

##### **Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments  
Experts in Residence Program

##### **Contractor:**

Nicole Morgan  
377 Maple Lane  
Ottawa, Ontario  
K1M 1H7

##### **CIDN:**

1015 0202001

#### **HIFE-BASED HOUSE PRICE INDEXES FOR CANADIAN CITIES AND MLS AVERAGE PRICES**

##### **Objective:**

To provide an inexpensive price index showing house price change in Canadian CMA's starting in 1990; to provide evidence on the reliability of the MLS price averages as price indexes for Canadian CMA's.

##### **CMHC Project Officer:**

M. Macpherson

##### **Division:**

Research Division  
External Research Program

##### **Contractor:**

Mrs. Marion Steele  
Associate Professor  
Department of Economics  
University of Guelph  
Guelph, Ontario  
N1G 2W1

##### **CIDN:**

1288 0200001

## **HOUSING A DIVERSE SOCIETY**

### **Objective:**

Canadian society is undergoing a number of changes, including a proliferation of non-traditional family structures and household types, and increased ethnicity in the population mix. This project will raise awareness and better define the challenge of ensuring that the housing market meets the needs of Canada's diversifying population, and will illustrate what society can do to address this issue. A report will be prepared on the subject of "Housing A Diverse Society" and will be presented at the symposium called "Housing Affordability in a Changing Society". It will also serve as a starting point for developing an action plan for follow-up research work that should be done on this subject.

### **MHC Project Officer:**

J. Mugford

### **Division:**

Strategic Planning and Policy Development Division

### **Contractor:**

Prairie Research Associates Inc.  
111 Pulford Street  
Winnipeg, Manitoba  
R3L 0E4

### **CIDN:**

1352 0100001

## **INTERNATIONAL YEAR OF THE FAMILY PUBLICATION**

### **Objective:**

Preparation of three housing profiles for an International Year of the Family publication.

### **MHC Project Officer:**

P. Fuller

### **Division:**

Statistical Services Division

### **Contractor:**

Statistics Canada  
D274 Jean Talon Building  
Tunney's Pasture  
Ottawa, Ontario  
K1A 0T6

### **CIDN:**

1108 0400008

## **MAXIMIZATION OF COMMUNITY BENEFITS DERIVED FROM HOUSING PROGRAMS IN REMOTE COMMUNITIES**

### **Objective:**

This project was designed to help remote communities realize full benefits of self-help housing programs (RNH demo projects) and, to explore opportunities for further application in community economic development of skills the residents developed through self-help housing programs.

The community identified for study was Sheshatshiu, Labrador.

The project comprises three stages which are:

- A community survey of skills and skill levels, especially those gained in conjunction with RNH housing development, towards the development of a community skill inventory;
- The assessment of these skills relative to potential initiatives in community economic development; and
- The development of a "How To" manual which other communities could use to replicate the inventory and assessment process.

### **CMHC Project Officer:**

P. Deacon

### **Division:**

Strategic Planning and Policy Development Division

### **Contractor:**

Terpstra and Associates Ltd.  
324 Hamilton River Road  
P.O. Box 10, Station "A"  
Goose Bay, Newfoundland  
A0P 1S0

### **CIDN:**

0798 0100001

## **MEASURING THE EFFECTS OF MUNICIPAL REGULATION ON HOUSE PRICES AND RENTS**

### **Objective:**

A background paper will be prepared to identify what CMHC and its housing partners can do, and the contributions each partner can make, in developing a quantitative tool that can be used to measure the impact of municipal regulations on house prices and rents. It will be presented for discussion at the CMHC-hosted symposium, "Housing Affordability in a Changing Society", on November 2, 1995, with a view to developing a research plan for additional work to be carried out on it in 1996.

### **CMHC Project Officer:**

David Scherlowski

### **Division:**

Policy Development Division

### **Contractor:**

Tsuriel Somerville  
Faculty of Commerce - UBC  
2053 Main Mall  
Vancouver, BC  
V6T 1Z2

### **CIDN:**

1494 01000001

### PRESTON DEMONSTRATION

**Objective:**

To determine the viability of a self-built housing assistance option in an urban setting.

**CMHC Project Officer:**

R. Lajoie

**Division:**

Senior Vice-President's Office  
Policy, Research and  
Communications

**Contractor:**

The Nova Scotia Department  
of Housing and Consumer  
Affairs  
Alderney Gate  
40 Alderney Drive, 5th Floor  
P.O. Box 815  
Dartmouth, Nova Scotia  
B2Y 3Z3

**CIDN:**

1011 0600001

### PROCEEDINGS OF THE HABITAT 94 CONFERENCE

**Objective:**

To support production of bilingual proceedings of the Habitat 94 conference - a joint conference between the Canadian Institute of Planners and the International Federation of Housing and Planning.

**CMHC Project Officer:**

D. Chamberland

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

**Contractor:**

Canadian Institute of Planners  
541 Sussex Drive  
2nd Floor  
Ottawa, Ontario  
K1N 6Z6

**CIDN:**

1295 0200002

### ROLE OF HOUSING IN AN ENABLING SOCIETY

**Objective:**

Analyze and discuss the various roles housing policy can play in the context of the enabling society model. Propose various ways housing policies can be used to promote the philosophy of the enabling society while elaborating on CMHC's role in this regard.

**CMHC Project Officer:**

E. Nera

**Division:**

Strategic Planning and Policy  
Development Division

**Contractor:**

Ekos Research Associates  
275 Sparks Street  
Suite 801  
Ottawa, Ontario  
K1R 7X9

**CIDN:**

1006 0100001

### SURVEY OF QUEBEC FRENCH LANGUAGE SCHOOL BOARDS

**Objective:**

To determine what curriculum units a sample of francophone school boards in Quebec use to teach housing topics to primary level students.

**CMHC Project Officer:**

P. Archer

**Division:**

Housing Innovation Division

**Contractor:**

Habitat Sur Mesure  
4626 De Bordeaux  
Montreal (Québec)  
J2J 2A1

**CIDN:**

1060 0301001

### TRENDS - HOUSING AND URBAN COMMUNITIES IN THE FUTURE

**Objective:**

A background paper, based on existing public opinion research, will be prepared to describe the views potential first-time homebuyers have towards housing and urban communities, and the reasoning behind their views by addressing the following four broad questions:

- (1) Investment: To what extent would potential first-time homebuyers consider housing as a good investment?
- (2) New Economy: What does the "New Economy" mean to potential first-time homebuyers from a housing perspective?
- (3) Fiscal Situation: How do potential first-time homebuyers see the fiscal situation impacting them from a housing perspective?
- (4) Environment: What do potential first-time homebuyers think about housing from an environmental perspective (both indoor and outdoor environment)? The background paper will be presented by the contractor at the CMHC-hosted symposium, "Housing Affordability in a Changing Society", on November 2, 1995.

**CMHC Project Officer:**

David Scherlowski

**Division:**

Policy Development Division

**Contractor:**

Dr. Darrell Bricker  
Angus Reid Group, Inc.  
1400 - 1 Nicholas Street  
Ottawa, Ontario  
K1N 7B7

**CIDN:**

1490 0100001



**TRI-COUNTRY CONFERENCE  
994**

**Objective:**

To support the production of 12 policy research papers addressing the broader influences and possible directions for housing policy in each of Canada, the U.S. and the U.K. and to ensure the effective exchange of these research findings among academics and practitioners from each of the three countries.

**CMHC Project Officer:**

D. Chamberland

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

**Contractor:**

Fannie Mae  
Office of Housing Policy  
Research  
3900 Wisconsin Avenue N.W.  
Washington, D.C.  
20016

**CIDN:**

1206 0200001



### Completed Reports/Rapports terminés

#### **COMMUNITY SUPPORT FOR AFFORDABLE HOUSING: A PUBLIC EDUCATION PACKAGE: CASE STUDY = SOUTIEN COMMUNAUTAIRE AU LOGEMENT ABORDABLE : DOCUMENTATION (DESTINÉE AU PUBLIC) : ÉTUDE DE CAS.**

*Affordability and Choice Today (A.C.T.) Case Study Project / Department of Housing, Regional Municipality of Peel, Brampton, Ontario. Prepared by Energy Pathways Inc. Prepared for the Federation of Canadian Municipalities, Canadian Home Builders' Association, Canadian Housing and Renewal Association and Canada Mortgage and Housing Corporation. Ottawa: The Associations: The Federation: The Corporation, 1994.*

In order to increase public awareness and acceptance of affordable housing projects within its jurisdiction, the Regional Municipality of Peel's Housing Opportunity Centre (HOC) established an Affordable Housing Education Committee to develop an affordable housing education package. The education package, containing a 16-minute video, a one-minute video vignette and a poster, was completed in December 1992. It provides people with the information they need to capably and objectively evaluate affordable housing proposals and their potential impact on the community.

By effectively dispelling public misconceptions about affordable housing, the education package should reduce public resistance to such projects. This, in turn, will facilitate the acceptance of affordable housing projects, encourage municipalities to consider changing the regulatory environment and enable the development industry to pursue innovative approaches to affordable housing.

NOTE: *Bilingual/bilingue.*

#### **SOUTIEN COMMUNAUTAIRE AU LOGEMENT ABORDABLE : DOCUMENTATION (DESTINÉE AU PUBLIC) : ÉTUDE DE CAS = COMMUNITY SUPPORT FOR AFFORDABLE HOUSING: A PUBLIC EDUCATION PACKAGE: CASE STUDY.**

*Abordabilité et choix toujours (A.C.T.) projet d'étude de cas / Ministère du Logement, municipalité régionale de Peel, Brampton (Ontario). Préparé par Energy Pathways Inc. Préparé pour la Fédération canadienne des municipalités, L'Association canadienne des constructeurs d'habitations, L'Association canadienne d'habitation et de rénovation urbaine et La Société canadienne d'hypothèques et de logement. Ottawa : Les Associations : La Fédération : La Société, 1994.*

Afin de sensibiliser le public et de lui faire mieux accepter les projets de logement abordable dans les limites de son territoire, la municipalité régionale de Peel, par l'intermédiaire du Housing Opportunity Centre (HOC), a créé le Comité d'information sur le logement abordable qui avait pour but d'élaborer une documentation sur le logement abordable. En décembre 1992, on a achevé la documentation qui comprend une cassette vidéo de 16 minutes, une vignette vidéo d'une minute et une affiche. Elle fournit les renseignements nécessaires pour évaluer de façon adéquate et objective les ensembles de logement abordable ainsi que leurs répercussions sur la collectivité.

Si la documentation réussit à dissiper les fausses impressions du public au sujet du logement abordable, elle devrait atténuer la résistance à ces ensembles. Par la suite, il sera plus facile de faire accepter les ensembles de logement abordable, d'encourager les municipalités à changer le contexte réglementaire, enfin, de permettre à l'industrie de l'aménagement d'adopter des méthodes innovatrices en matière de logement abordable.

NOTE : *Bilingue/bilingual.*

## **A GUIDE TO IMPROVING HOUSING AFFORDABILITY**

### **Objective:**

The development of a prototype issue of a guide that will enable housing producers and providers to review, examine and assess proven development, design and financing strategies that improve housing affordability with the objective of implementing them. The guide will use CD-ROM technology for the storing and retrieval of information.

### **CMHC Project Officer:**

F. Grammenos

### **Division:**

Research Division

### **Contractor:**

McGill University  
815 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

### **CIDN:**

0889 0200002

## **SHELTER AFFORDABILITY AND HOUSING NEEDS OF CANADIAN FOOD BANK CLIENTS**

### **Objective:**

Will examine the relationship between food banks and housing, and produce a profile of the typical food bank client in Winnipeg, Manitoba, in regard to shelter needs and other socio-demographic variables.

### **CMHC Project Officer:**

M. Macpherson

### **Division:**

Research Division  
External Research Program

### **Contractor:**

Professor Jeff Sloan  
Manitoba Nursing Research  
Institute  
Faculty of Nursing  
University of Manitoba  
Winnipeg, Manitoba  
R3T 2N2

### **CIDN:**

1099 0200001

## **UPDATE OF REPORT "REGULATORY MECHANISMS TO FACILITATE THE PRODUCTION OF AFFORDABLE HOUSING"**

### **Objective:**

To update the report "Regulatory Mechanisms to Facilitate the Production of Affordable Housing" and in particular to address the developments that have occurred in Ontario and B.C. since the original report was produced.

### **CMHC Project Officer:**

B. Gray

### **Division:**

Research Division

### **Contractor:**

Richard Drdla Associates  
415 1/2 Wellesley Street East  
Toronto, Ontario  
M4X 1H5

### **CIDN:**

0892 0201001

## Ongoing Projects/Projets en cours

### A COMPARATIVE STUDY OF IMMIGRANT HOUSING IN MONTREAL AND TORONTO

**Objective:**

To address the linkages between housing, neighbourhoods and social networks among visible minority immigrant groups living in metropolitan Montreal and Toronto.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Brian K. Ray  
McGill University  
805 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

**CIDN:**

1283 0200001

### IMMIGRANT HOUSING CHOICES, 1991

**Objective:**

To update and extend a recently completed study of immigrant housing choices based on 1986 census data. This study will describe differences between the housing choices of immigrants and non-immigrants in 1991 and compare findings to those of the previous study. 1986 and 1991 census data will be used to trace changes over time in the behaviour of individual immigrant cohorts. Through focus groups and statistical analysis of 1991 census data, the research will attempt to identify factors underlying observed differences between immigrants and non-immigrants.

**CMHC Project Officer:**

R. Lewis

**Division:**

Research Division

**Contractor:**

Lapointe Consulting Inc.  
311 Markham Street  
Toronto, Ontario  
M6G 2K8

**CIDN:**

0854 0201001  
0854 0200002

### SURVEY OF ISSUES AFFECTING RACIAL AND ETHNIC MINORITIES IN THE HOUSING SECTOR

**Objective:**

The purpose of this research is to explore housing issues affecting racial and ethnic minorities and to identify issues, problems, and gaps in housing services available through conducting a survey of government and non-government organizations serving the community. In addition, to promote possibilities for information exchange, information will be compiled for a directory of governmental and non-governmental agencies and organizations working in this area.

**CMHC Project Officer:**

S. Mockler

**Division:**

Strategic Planning and Policy  
Development Division

**Contractor:**

Ekos Research Associates Inc.  
275 Sparks Street  
Suite 801  
Ottawa, Ontario  
K1R 7X9

**CIDN:**

1067 0100001



### A DECIMA RESEARCH REPORT TO THE INTERNATIONAL RELATIONS DIVISION OF THE CANADA MORTGAGE AND HOUSING CORPORATION.

*Prepared by Decima Research. Prepared for International Relations Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

This report presents the findings of a market research survey of over 100 firms in housing-related businesses actively engaged in, or about to engage in, housing export markets. The report provides a detailed profile of exporters, identifies specific export barriers such as transportation costs, language and cultural barriers, differences in international regulations and standards, financing problems, etc. It also describes the various approaches used to penetrate foreign markets. In addition, the extent to which stakeholders have access to good information is assessed.

Housing exporters and prospective exporters expressed high levels of interest in a wide range of information/support services. Several respondents mentioned the need for an information "broker" - a single source that could be tapped for information or advice. This finding suggests that there is an opportunity for disseminating information, but communications will have to be highly targeted. Establishing and maintaining a mailing list of such firms would be a critical first step. The report also recommends a "mentoring" initiative to help firms that have only recently entered into export markets or those contemplating entry.

### Ongoing Projects/Projets en cours

#### CANADA'S EXPORTABLE HOUSING

##### Objective:

Selection of text and visual material suitable for inclusion in a forthcoming publication entitled "Canada's Exportable Housing" that is intended for foreign audiences.

##### CMHC Project Officer:

G. Duc

##### Division:

International Relations Division

##### Contractor:

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

##### CIDN:

1425 0901001

#### CANADIAN HOUSING PRODUCTS AND SERVICES FOR CHINA

##### Objective:

To identify potential opportunities for Canadian manufactured products and services for the Beijing housing market.

##### CMHC Project Officer:

R. Duncan

##### Division:

Housing Innovation Division

##### Contractor:

McGill University  
School of Architecture  
815 Sherbrooke Street West  
Montreal (Québec)  
H3A 2K6

##### CIDN:

1263 0300001



### **COMMERCIAL OPPORTUNITIES FOR CANADA'S HOUSING SECTOR IN CENTRAL AND EASTERN EUROPE**

#### **Objective:**

To provide a primer describing the essential features of Central and Eastern European housing markets, identify housing needs, provide guidance on how to strategically approach Central and Eastern European markets, and indicate Canadian and foreign resources that are potentially available to Canadian providers of housing technology.

#### **CMHC Project Officer:**

G. Duc

#### **Division:**

International Relations  
Division

#### **Contractor:**

Canadian Urban Institute  
2nd Floor  
West Tower City Hall  
Toronto, Ontario  
M5H 2N1

#### **CIDN:**

0955 0900002

### **EXPORT STRATEGIES OF CANADA'S COMPETITORS IN INTERNATIONAL HOUSING MARKETS**

#### **Objective:**

To examine the housing export capabilities of Canada's principal competitors in international housing markets as well as the strategic approaches that these countries use to do business internationally.

#### **CMHC Project Officer:**

G. Duc

#### **Division:**

International Relations  
Division

#### **Contractor:**

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### **CIDN:**

1369 0900001

### **OVERVIEW OF HOUSING EXPORT OPPORTUNITIES FOR CANADIANS**

#### **Objective:**

To undertake an analysis of the nature and sources of international demand for Canadian housing systems, products, services and technologies.

#### **CMHC Project Officer:**

G. Duc

#### **Division:**

International Relations  
Division

#### **Contractor:**

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

#### **CIDN:**

1293 0900006  
1294 0900001

### THE STORY OF A HOUSE: THREE CHAPTERS OF GROWTH.

*Ottawa: Canada Mortgage and Housing Corporation, 1995.*

The purpose of this project is to design and construct an innovative suburban housing type that can be expanded and changed according to the occupants' evolving lifestyles and needs. Three variations of the small-lot, detached housing type are being developed to illustrate how the house can be modified over time. The project, funded in 1991 by the A.C.T. Grant Program, will provide built examples to stimulate reform in municipal planning bylaws relating to residential land use.

This is the second of four progress reports on the development of three small-lot detached houses. The first report described the site selection process. This report describes the preliminary design and choice of prototypes for the three houses. The first house, a 2 bedroom, split-entry gable form is designed for a small family. The second house is a 4 bedroom, split-entry bungalow. The third house, a level-entry prototype, includes two units and could accommodate two families or a household and a place of work in the same building.

### Ongoing Projects/Projets en cours

#### ALTERNATIVES FOR THE PLANNING AND DESIGN OF HOUSING IN ST. JOHN'S

##### Objective:

To explore alternatives for the planning and design of new low and medium density housing in St. John's, Newfoundland.

##### CMHC Project Officer:

M. Macpherson

##### Division:

Research Division  
External Research Program

##### Contractor:

Robert Mellin, Architect  
89 Barnes Road  
St. John's, Newfoundland  
A1C 3X5

##### IDN:

1095 0200001

#### 4D ENVIRONMENTAL SIMULATION TO EVALUATE DESIGN ALTERNATIVES FOR MEDIUM DENSITY HOUSING

##### Objective:

To document and present sustainable planning and design alternatives for an existing subdivision in Calgary using ACV technology, and to use the generated digitized images for testing consumer receptivity of the alternatives.

##### CMHC Project Officer:

F. Grammenos

##### Division:

Research Division  
External Research Program

##### Contractor:

Richard Perron  
Dept. of Landscape  
Architecture  
University of Manitoba  
Winnipeg, Manitoba  
R3T 2N2

##### CIDN:

1279 0200001

#### HABITATION ET FLEXIBILITÉ AU CANADA : BILAN 1991

##### Objet :

Construire une grille d'analyse permettant de dresser une typologie des solutions apportées par les architectes; et faire un rapport de synthèse proposant un bilan global des perspectives de résolution du problème de flexibilité dans un projet d'habitation.

##### Agent de projet pour la SCHL :

M. Macpherson

##### Division :

Division de la recherche  
Programme de subventions de recherche

##### Contractant :

Annie Chelin  
5780, rue Hutchison  
Outremont (Québec)  
H2V 4B6

##### NIC :

0911 0200001

### **PASSIVE SOLAR HOUSE DESIGNS FOR CANADA**

#### **Objective:**

To identify relevant literature and design tools, analyze and interpret data in order to update the existing CMHC publication on passive solar house designs.

#### **CMHC Project Officer:**

F. Grammenos

#### **Division:**

Research Division

#### **Contractor:**

Leslie Jones & Associates Ltd.  
319 Catherine Street  
Ottawa, Ontario  
K1R 5T4

#### **CIDN:**

1241 0200001

### **VILLE ST-LAURENT REVISITED: WARTIME HOUSING AND ARCHITECTURAL CHANGE, 1942-92**

#### **Objective:**

To study a solution offered by the wartime housing effort and to test its lessons for today's housing problems.

#### **CMHC Project Officer:**

M. Macpherson

#### **Division:**

Research Division  
External Research Program

#### **Contractor:**

Dr. Annmarie Adams  
School of Architecture  
McGill University  
815 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

#### **CIDN:**

1083 0200001

### **VIRTUAL REALITY AND ITS POTENTIAL USES IN THE HOUSING SECTOR**

#### **Objective:**

To assess potential opportunities to apply virtual reality technology in Canadian urban planning and the housing sector. Particular attention will be given to the potential use of virtual reality in designing sustainable communities and accessible housing for the disabled and seniors. The final report will provide an overview of virtual

reality technology and discuss examples of existing applications relevant to housing and urban development.

#### **CMHC Project Officer:**

D. Leong

#### **Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments  
Experts in Residence Program

#### **Contractor:**

John Thurston  
26 Standford Private  
Ottawa, Ontario  
K1T 3J3

#### **CIDN:**

1015 0202003

# HOUSING FORECASTING AND DEMAND/ PRÉVISION ET DEMANDE DE LOGEMENTS

## Ongoing Projects/Projets en cours

### CHILDREN LIVING IN TWO HOMES: JOINT CUSTODY AND DUAL RESIDENCES

**Objective:**

Through a literature review and a survey of families, this study will examine the overall magnitude and possible longer term implications of joint custody agreements for housing demand and the use and design of dwellings.

**CMHC Project Officer:**

D. Chamberland

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments  
Experts in Residence Program

**Contractor:**

Mr. Martin Wexler  
45, rue Chesterfield  
Westmount, Quebec  
H3Y 2M4

**CIDN:**

1015 0201001

### PHD MODEL - COHERT EXTRAPOLATIONS

**Objective:**

To modify PHD Software to allow for extrapolation of headship and ownership rates.

**CMHC Project Officer:**

R. Lewis

**Division:**

Research Division

**Contractor:**

Tetrad Computer Applications  
Limited  
1445 West Georgia Street  
Vancouver, British Columbia  
V6G 2T3

**CIDN:**

1344 0200001

### PHD MODEL - NON-FAMILY BREAKDOWN

**Objective:**

To modify the software for the potential housing demand (PHD) projection model to allow for disaggregation of non-family households into component household types and implementation of other desirable enhancements.

**CMHC Project Officer:**

R. Lewis

**Division:**

Research Division

**Contractor:**

Tetrad Computer Applications  
Limited  
1445 West Georgia Street  
Vancouver, British Columbia  
V6G 2T3

**CIDN:**

1344 0200001

### PREPARATION OF ARTICLES ON HOUSING NEEDS AND REQUIREMENTS

**Objective:**

To prepare three articles for publication on housing needs and requirements.

**CMHC Project Officer:**

J. Angus

**Division:**

Research Division

**Contractor:**

Focus Consulting  
40 Java Street  
Ottawa, Ontario  
K1Y 3L3

**CIDN:**

1404 0200001



## Ongoing Projects/Projets en cours

### DEMOGRAPHIC CHANGE AND THE HOUSING MARKET IN CANADA

#### Objective:

To deepen our understanding of demographic effects on housing markets and to identify future policy problems that might emerge in the ownership and rental markets.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Mr. Arthur Hosios  
University of Toronto  
Institute for Policy Analysis  
707 - 140 St. George Street  
Toronto, Ontario  
M5S 1A1

#### CIDN:

1091 0200001

### ÉVOLUTION DE LA DEMANDE DE LOGEMENT ET STABILITÉ DES PRIX IMPLICITES DES ATTRIBUTS RÉSIDENTIELS; UNE COMPARAISON 1986-1991

#### Objet :

La recherche consiste à étudier les modifications survenues entre 1986 et 1991 dans la structure de la demande de logement des ménages de la région de Québec. Le modèle hédonique «RÉSIVALU», mis au point il y

a quelques années, a permis de tracer un portrait détaillé des préférences des ménages en matière de logement pour la période 1986-1987, et ce pour l'ensemble des sous-marchés de propriétaires-occupants sur le territoire de la Communauté urbaine de Québec (CUQ). Cette étude aura recours à un système d'information géographique en voie d'élaboration pour le territoire de la CUQ qui s'intégrera au modèle hédonique RÉSIVALU à régression multiple. Elle comparera la carte des préférences des ménages de 1986 à celle de 1991 et examinera les changements qui ont marqué les prix implicites des attributs des prix des maisons. L'étude permettra en outre de mesurer les déplacements fiscaux entre municipalités de la CUQ, les modifications des structures socio-économiques ainsi que l'étalement urbain.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

François Desrosiers  
Professeur titulaire  
Université Laval  
Faculté des sciences de  
l'administration  
Sainte-Foy (Québec)  
G1K 7P4

#### NIC :

1275 0200001

### MATCHING BUYERS AND SELLERS IN THE RESALE HOUSING MARKET

#### Objective:

Matching buyers and sellers in the resale housing market.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Mr. Christopher T. Ragan  
Department of Economics  
McGill University  
855 Sherbrooke Street West  
Montreal, Quebec  
H3A 2T7

#### CIDN:

1098 0200001

## HOUSING RESEARCH/RECHERCHE EN LOGEMENT

### Ongoing Projects/Projets en cours

#### **INVENTORY OF RESEARCH AND INFORMATION PRODUCTS OF MEMBERS OF THE NATIONAL HOUSING RESEARCH COMMITTEE**

##### **Objective:**

To develop a computerized inventory of research and information products of members of the National Housing Research Committee to facilitate access to information on ongoing and planned housing research activities in Canada.

##### **CMHC Project Officer:**

T. McGregor

##### **Division:**

Research Division

##### **Contractor:**

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

##### **CIDN:**

1238 0200001

1238 0201001

## HOUSING SAFETY/SÉCURITÉ À DOMICILE

### Ongoing Projects/Projets en cours

#### HOUSING RELATED SAFETY AND SECURITY STANDARDS

**Objective:**

To identify key players both nationally and internationally who have been involved in the development of housing related safety and security standards.

**CMHC Project Officer:**

J. Lightbound

**Division:**

Strategic Planning and Policy  
Development Division

**Contractor:**

B.C. Coalition for Safer  
Communities & Secure Design  
C/O The People's Law School  
150-900 Howe Street  
Vancouver, British Columbia  
V2Z 2M4

**CIDN:**

1299 0100002

**SHARED SERVICING FOR RURAL COHOUSING: A SUSTAINABLE APPROACH TO RURAL HABITATION.**

*Prepared by John A. Zsolt. Ottawa: Canada Mortgage and Housing Corporation, 1994. (External Research Program).*

Throughout North America new systems are being developed to deal with the problems associated with on-site servicing for rural residential communities. The intention of this report is to study alternative on-site servicing systems for cohousing type developments and create a model for sustainable rural habitation. The study focuses on the 4 systems required for the servicing of a group of 30 clustered dwellings. The four essential systems for servicing housing are: sewage treatment; water supply; stormwater control; and heating. The first research objective is to provide a complete summary of the viable alternatives available to those suited for this scale of development and capable of working effectively in a northern climate. A second objective of the report is to provide alternative approaches to development. In order to demonstrate this, a theoretical housing model is created. This hypothetical community, Hamlet Co-X, shows the importance of integrated design in forming sustainable communities and gives an indication of the many possibilities not yet explored in housing.

Some of the major findings of the study are:

- A communal ground water system designed for Hamlet Co-X complete with chlorination system and water tower could be constructed for an estimated 50% of construction costs of 30 individual well systems.
- Effective site and landscape design is the single most important factor in controlling storm water runoff. This is achieved most notably by reducing impervious surfaces where possible and providing effective planting in conjunction with proper site grading.
- The tight clustering of the dwellings in Hamlet Co-X provides an opportunity for a district heating system. Using a ground source heat pump energy source in a district heating system versus individual home systems reduces the total capital installation costs for this project by an estimated 36%.
- Small diameter sewer systems offer a good alternative to conventional gravity flow collection systems. The solar aquatic system and the peat filter are both good options for the treatment of wastewater in a small community.



# INFRASTRUCTURE/INFRASTRUCTURE

## A SYNTHESIS OF TECHNICAL RESEARCH AND ITS POTENTIAL FOR APPLICATION IN LINEAR INFRASTRUCTURE RENEWAL.

*Prepared by CH2M Hill Engineering Ltd. Principal consultant, Tom Field. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

This study reviews a wide range of materials, equipment, and management strategies designed to improve linear infrastructure performance, and deals with techniques and approaches which could be used to develop an information base of available technology. Besides identifying technological innovations related to water and sewer infrastructure currently available in Canada and elsewhere, the report synthesizes views about them so that municipal administrators, engineering professionals, and other stakeholders can understand how to take advantage of them. Also investigated are issues related to codes, specifications, and other mechanisms by which cost-effective procedures and technologies can be implemented in infrastructure renewal and repair.

Some of the findings of the study are presented below:

- The condition of Canadian linear infrastructure varies with age. Some is in poor condition and is ill-equipped to provide the service required at present, to say nothing of the higher levels of service that will be required in expanded cities and towns.
- When considering infrastructure assets and investments, municipalities look to short-term solutions rather than considering the actual life of the asset. In general, water and sewer infrastructure is not adequately maintained, and there is a serious need to find ways of optimizing the performance and extending the life of existing facilities.
- Significant research efforts are being made in water and wastewater infrastructure design and management, and valuable innovations have resulted. A feature of this research is that it has been predominantly publicly funded and carried out in provincial and federal government institutes and universities.
- There are definite barriers in applying innovations to water and wastewater infrastructure projects and problems, including the way they are funded, operated, designed and built.

## Ongoing Projects/Projets en cours

### ATELIER SUR L'INFRASTRUCTURE ET L'HABITATION

#### Objet :

D'examiner les questions économiques et sociales relatives aux infrastructures au Canada, leur gestion, leur état et leur financement, ainsi que de trouver des moyens d'améliorer la diffusion de l'information dans ce domaine.

#### Agents de projet pour la SCHL :

D. Myette, M.H. Pastor

#### Division :

Division de la recherche

#### Contractant :

M. Pierre A. Letartre  
Faculté des sciences de  
l'administration  
C.P. 534  
Pavillon Palasis-Prince  
Université de Laval  
Québec, (Québec)  
G1K 7P4

#### NIC :

1420 0200003

## **FOLLOW-UP DOCUMENTS FOR THE WORKSHOP ON INFRASTRUCTURE**

### **Objective:**

To prepare follow-up documents for the workshop on infrastructure and housing.

### **CMHC Project Officer:**

M.H. Pastor

### **Division:**

Research Division

### **Contractor:**

HLR Publishing Group  
51 Ottawa Street  
Arnprior, Ontario  
K7S 1W9

### **CIDN:**

1420 0200004

## **INFRASTRUCTURE COSTS ASSOCIATED WITH CONVENTIONAL AND ALTERNATIVE DEVELOPMENT PATTERNS**

### **Objective:**

To carry out the study entitled: "Infrastructure Costs Associated with Conventional and Alternative Development Patterns".

### **CMHC Project Officer:**

D. D'Amour

### **Division:**

Research Division

### **Contractor:**

Essiambre Phillips Desjardins  
1900 City Park Drive  
Suite 206  
Gloucester, Ontario  
K1J 1A3

### **CIDN:**

1193 0200001

## **INNOVATIVE INFRASTRUCTURE: MUNICIPAL EXPERIENCES**

### **Objective:**

To present a very brief historical outline of the evolution of the design of the dominant Canadian municipal infrastructure systems and materials, to provide an examination of the technical causes for a range of failures in some of these systems; to place into context an identification of technologies to repair these failing systems; and to carry out a survey to identify durable repair technologies and to provide case studies on a number of examples which have been locally acceptable and affordable.

### **CMHC Project Officer:**

A. Houston

### **Division:**

Research Division

### **Contractor:**

REIC Ltd.  
15010 Yonge Street  
Aurora, Ontario  
L4G 1M6

### **CIDN:**

1219 0200001

## **PUBLIC-PRIVATE PARTNERSHIPS IN URBAN INFRASTRUCTURE**

### **Objective:**

This study will document some innovative experiences of private sector involvement in urban infrastructure delivery and financing and assess its impact on costs for the infrastructure service, the quantity and quality of the service, on housing affordability and on the housing sector at large including the impacts on developers, new home buyers and existing homeowners.

### **CMHC Project Officer:**

M.H. Pastor

### **Division:**

Research Division

### **Contractor:**

IBI Group  
230 Richmond Street West  
5th Floor  
Toronto, Ontario  
M5W 1V6

### **CIDN:**

1358 0200001

## **A STUDY ON ISSUES RELATED TO THE DISSEMINATION OF INFORMATION ON MUNICIPAL INFRASTRUCTURE**

### **Objective:**

To study issues related to the dissemination of information on municipal infrastructure and assess the appropriateness of various mechanisms aimed at facilitating the dissemination of information.

### **CMHC Project Officer:**

M.H. Pastor

### **Division:**

Research Division

### **Contractor:**

REIC Ltd.  
15010 Yonge Street  
Aurora, Ontario  
L4G 1M6

### **CIDN:**

1396 0200001

## Ongoing Projects/Projets en cours

### **DEVELOPMENT OF COMMERCIALLY VIABLE CONCEPTS AND A DESIGN FOR A RESIDENTIAL FRAMING SYSTEM FOR A MONOCOQUE HOUSE**

#### **Objective:**

The development of commercially viable engineered structural concepts and a design for a monocoque framing system for residential structures which can be adopted by home builders for the construction of houses on unstable soils; monitoring of the demonstration of the system in a house construction project and a report of the results of the work for CMHC.

#### **CMHC Project Officer:**

R. Duncan

#### **Division:**

Housing Innovation Division

#### **Contractor:**

Gower, Yeung & Associates  
Ltd.  
615 Eighth Street  
Suite 201  
New Westminster, British  
Columbia  
V3M 3S3

#### **CIDN:**

0657 0300001

### **MONOCOQUE CAVITY RIGID PANEL FOR WALL AND ROOF CONSTRUCTION**

#### **Objective:**

To finalize the design of monocoque wall and roof panels and the locking joint assemblies for these panels, and produce prototype wall and roof panels for testing.

#### **CMHC Project Officer:**

M. Macpherson

#### **Division:**

Research Division  
Housing Technology  
Incentives Program

#### **Contractor:**

Ray-Co-Tech Inc.  
30, rue Des Frenes  
Bromont (Québec)  
J0E 1L0

#### **CIDN:**

1270 0200001

### **VIDEO ON CANADIAN HOUSING INNOVATION**

#### **Objective:**

To develop a video geared to consumers and intended for use by members of the housing industry and government to encourage innovation in new home construction and renovation.

#### **CMHC Project Officer:**

F. Harding

#### **Division:**

Housing Innovation Division

#### **Contractor:**

Canadian Home Builders  
Association  
150 Laurier Avenue West  
Suite 200  
Ottawa, Ontario  
K1P 5J4

#### **CIDN:**

1469 0300001

### ASSESSMENT OF THE CAPACITY TO USE STOCHASTIC MODELS IN BUILDING LIFE-CYCLE COSTING

#### Objective:

The study is an evaluation of how well easily collected, financial data reported on audited statements and supporting documentation about housing that is targeted towards low and moderate income households can be used in conjunction with well known probabilistic models to estimate long term maintenance, repair and replacement costs.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Aron Spector  
Ark Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

#### CIDN:

1100 0200001



### Ongoing Projects/Projets en cours

#### **A LITERATURE AND CODE REVIEW ON DAYLIGHTING IN HOUSING**

**Objective:**

To review the literature and the National Building Code of Canada on the treatment of daylighting as a factor in planning and design of housing in northern latitude countries.

**CMHC Project Officer:**

V. Salares

**Division:**

Research Division

**Contractor:**

James Love Consultants  
1737 2nd Avenue N.W.  
Calgary, Alberta  
T2N 0G3

**CIDN:**

1214 1100003

#### **REVIEW OF LIGHTING AND HUMAN HEALTH**

**Objective:**

To review the biological effects of light (from the ultraviolet to the infrared) with emphasis on the effects (biochemical, physiological, etc.) on human health.

**CMHC Project Officer:**

V. Salares

**Division:**

Research Division

**Contractor:**

Dr. Benjamin Rusak &  
Associates  
1976 Beech Street  
Halifax, Nova Scotia  
B3H 4B8

**CIDN:**

1214 1100001

## MANUFACTURED HOUSING/HABITATIONS USINÉES

### Ongoing Projects/Projets en cours

#### A STRUCTURAL ANALYSIS OF THE CANADIAN AND INTERNATIONAL MANUFACTURED HOUSING INDUSTRY

##### Objective:

To enhance the international competitiveness of the Canadian manufactured housing industry.

##### CMHC Project Officer:

T. McGregor

##### Division:

Research Division

##### Contractor:

Canadian Manufactured  
Housing Association  
150 Laurier Avenue West  
Suite 200  
Ottawa, Ontario  
K1P 5J4

##### CIDN:

1290 0200001

### Completed Reports/Rapports terminés

#### **MEASURING HUMIDITY IN YOUR HOME: DO YOU HAVE A HUMIDITY PROBLEM?**

*About Your House Series; CE1. Ottawa: Canada Mortgage and Housing Corporation, 1995.*

This publication outlines the typical symptoms and long-term effects of too much or too little humidity on a house and its occupants. It recommends using either a mechanical or electronic hygrometer to measure the relative humidity (RH) in the house and describes a step-by-step procedure for calibrating the hygrometer using everyday household items. Once the hygrometer is calibrated and the humidity level of the house is known, steps can be taken to control the problem. This may require simple changes in habits such as remembering to open and close doors and windows, or installing exhaust fans in kitchens and bathrooms. Very low indoor RH levels in winter may be due to cold, dry air leaking in from the outside. Sealing up the house will help to improve humidity conditions; humidifiers can also be useful for increasing RH levels.

NOTE : Aussi disponible en français sous le titre : Mesurer l'humidité dans votre maison : Avez vous un problème d'humidité?

#### **MESURER L'HUMIDITÉ DANS VOTRE MAISON : AVEZ-VOUS UN PROBLÈME D'HUMIDITÉ?**

*Collection Votre maison; CF1. Ottawa : Société canadienne d'hypothèques et de logement, 1995.*

Cette publication résume les symptômes habituels d'un surcroît ou d'un manque d'humidité et les effets à long terme de cette situation sur la maison et ses occupants. On y préconise l'utilisation d'un hygromètre mécanique ou électronique pour mesurer l'humidité relative (HR) à l'intérieur de la maison. On y décrit également une méthode simple pour étalonner cet instrument en utilisant des articles courants. Une fois l'hygromètre étalonné et le taux d'humidité établi dans la maison, certaines mesures peuvent être prises pour remédier au problème. Il suffit parfois de changer certaines habitudes, notamment, d'ouvrir ou de fermer les portes ou les fenêtres, ou de poser des ventilateurs d'extraction dans la salle de bains ou la cuisine. Les très faibles taux d'HR en hiver peuvent être le résultat de l'infiltration dans la maison, d'air froid et sec de l'extérieur. Les conditions d'humidité peuvent être améliorées, en étanchéifiant la maison; les humidificateurs peuvent aussi être utiles pour rehausser l'HR.

NOTE: Also available in English under the title: Measuring Humidity in Your Home: Do You Have a Humidity Problem?

# **ENHANCE THE EMPTIED COMPUTER PROGRAM AND DEVELOP A MANUAL**

## **Objective:**

To develop a tutorial manual on the EMPTIED computer program that will describe the method of calculation and provide illustrative examples of the application of the EMPTIED program in predicting moisture accumulation in walls and condensation on windows. Guidelines for considering the effects of solar radiation and frost action will be included.

## **CMHC Project Officer:**

J. Rousseau

## **Division:**

Housing Innovation Division

## **Contractor:**

Handegord and Company  
Limited  
185 Strathcona Road S.W.  
Calgary, Alberta  
T3H 1X9

## **CIDN:**

1107 0300001  
1107 0301001

# **MOISTURE IN ATLANTIC HOUSING: TRAINER'S MANUAL DEVELOPMENT AND WORKSHOP DELIVERY**

## **Objective:**

To develop a training package based on the CMHC publication, Moisture in Atlantic Housing, and deliver this information to the

residential construction industry at a pilot workshop in Saint John, N.B.

## **CMHC Project Officer:**

T. Marshall

## **Division:**

Housing Innovation Division

## **Contractor:**

Designed Solutions Ltd.  
P.O. Box 4230  
Dieppe, New Brunswick  
E1A 6E7

## **CIDN:**

1408 0300001

# **PROTECTING GYPSUM SHEATHING IN INSULATED STEEL-STUD WALLS**

## **Objective:**

To determine which types of wall arrangements perform the best with respect to moisture control under similar boundary conditions.

## **CMHC Project Officer:**

M. Macpherson

## **Division:**

Research Division  
External Research Program

## **Contractor:**

Dr. Kim Pressnail  
Assistant Professor  
Dept. of Civil Engineering  
University of Toronto  
35 St. George Street  
Toronto, Ontario  
M5S 1A4

## **CIDN:**

1282 0200001

# **WIND TUNNEL EXPERIMENTS SIMULATING WIND DRIVEN RAIN**

## **Objective:**

Study the density of rain impact for three common building shapes and with three architectural features that are designed to minimize rain impact on the buildings.

## **CMHC Project Officers:**

J. Rousseau; P.-M. Busque

## **Division:**

Housing Innovation Division

## **Contractor:**

The Boundary Layer Wind  
Tunnel Laboratory  
University of Western Ontario  
Room 271  
Stevenson Lawson Building  
London, Ontario  
N6A 5B8

## **CIDN:**

1123 0304001  
1123 0300001



## MORTGAGES AND HOUSING FINANCE/ HYPOTHÈQUES ET LOGEMENT – FINANCES

### Ongoing Projects/Projets en cours

#### **FEASIBILITY STUDY ON METHODOLOGY FOR MEASURING DISCRIMINATION IN RESIDENTIAL MORTGAGE LENDING**

##### **Objective:**

To identify alternative approaches to measuring discrimination in residential mortgage lending, and determine the feasibility of these different methods. Each option must be distinct from the others and be practicably

feasible against the backdrop of the critical success factors within the Canadian context. The report will make a recommendation to CMHC providing a detailed action plan for implementing the recommended approach.

##### **CMHC Project Officer:**

J. Mugford

##### **Division:**

Strategic Planning and Policy  
Development Division

##### **Contractor:**

Prairie Research Associates  
Inc.  
111 Pulford Street  
Winnipeg, Manitoba  
R3L 0E4

##### **CIDN:**

1352 0100001

## MUNICIPAL GOVERNMENT AND FINANCE/ ADMINISTRATION MUNICIPALE ET FINANCES

### Ongoing Projects/Projets en cours

#### **HANDBOOK ON MUNICIPAL ENVIRONMENTAL PRICING**

##### **Objective:**

To produce the ICLEI handbook on municipal environmental pricing which will provide a blueprint for reforming municipal economic instruments.

##### **CMHC Project Officer:**

J. Smugler

##### **Division:**

International Relations  
Division

##### **Contractor:**

International Council for  
Local Environmental  
Initiatives  
City Hall, East Tower  
8th Floor  
Toronto, Ontario  
M5H 2N2

##### **CIDN:**

1252 0900001

#### **ASSESSMENT OF THE REQUIREMENTS TO ESTABLISH FIRST NATIONS BUILDING INSPECTION UNITS: CONSOLIDATION OF REPORTS.**

*Prepared by First Nations Management Inc. Ottawa: Canada Mortgage and Housing Corporation, 1994.*

This report presents three papers on the requirements for establishing First Nations building inspection units. The purpose of this study is to determine the financial and human resources necessary to establish a system of First Nations housing inspection units across Canada and to identify the legal, regulatory and other barriers that must be addressed if the system is to be put successfully into place.

Paper #1 - First Nations Housing Inspection: A Profile, provides an overview of existing First Nations housing inspection units detailing the present scope of activities and discusses current systems for inspection of First Nations housing, including processes and related requirements, pre-requisite training, education and certification.

Paper #2 - First Nations Housing Inspection Units: Models & Resources presents three First Nations models for inspecting building construction and renovation. It also examines training availability, the delivery of courses and funding requirements.

Paper #3 - First Nations Housing Inspection: Regularity Issues discusses legal and regulatory barriers to establishing First Nations inspectors units, including issues such as building codes and standards on reserve, surety bonding, insurance and liability.

#### **EVALUATION OF THE MÉTIS HOUSING ADMINISTRATION PROGRAM.**

*Prepared by Canada Mortgage and Housing Corporation, Regina Branch, Social Housing and F/P Relations Dept. with assistance from Program Evaluation Division, CMHC. Ottawa : CMHC, 1994.*

The Métis Housing Administration Program (MHAP) was a pilot program jointly developed by Canada Mortgage and Housing Corporation (CMHC), Saskatchewan Municipal Government Housing Division (MGHD), and the Métis Nation of Saskatchewan (MNS). The purpose of the program was to enable participants to prepare for employment in the delivery, administration and management of housing programs in the public and private sectors. This report assesses the continuing need for the Métis Housing Administration Program, the extent to which the program has achieved its objectives and the cost-effectiveness of the approach taken.

The evaluation suggests that all of the objectives of the program have been met to some extent. The MHAP has been able to address the perceived shortcomings of the Cadre Program, providing valuable skills to assist Métis people in participating effectively in the labour market. However, the total cost of the program is considered substantial. Some cost reductions could be made to the program. The evaluation also suggests program enhancements and future directions.

## ABORIGINAL HOUSING NEEDS

### Objective:

To provide a profile of the housing characteristics and needs of aboriginal peoples using data from the 1991 Census and post-censal Aboriginal Peoples Survey (APS).

### CMHC Project Officer:

J. Angus

### Division:

Research Division

### Contractor:

ARK Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

### CIDN:

1045 0201002

## ANALYSIS OF MIGRATION AND RESIDENTIAL MOBILITY PATTERNS AMONG CANADA'S ABORIGINAL POPULATION

### Objective:

To undertake a study examining both the migration and mobility patterns among aboriginal groups. The study will explore the relationship with the urbanization and housing conditions of the aboriginal population.

### CMHC Project Officer:

D. Chamberland

### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

### Contractor:

Royal Commission on  
Aboriginal Peoples  
427 Laurier Avenue, 6th Floor  
P.O. Box 1993, Station "B"  
Ottawa, Ontario  
K1P 1B2

### CIDN:

1171 0200001

## THE HOUSING CRISIS IN CANADA'S INUIT COMMUNITIES

### Objective:

To conduct research on housing issues relevant to Inuit people.

### CMHC Project Officer:

A. Wellman

### Division:

Strategic Planning and Policy  
Development Division

### Contractor:

Inuit Tapirisat of Canada  
Suite 510  
170 Laurier Avenue West  
Ottawa, Ontario  
K1P 5V5

### CIDN:

1196 0100001

## HOUSING FOR THE MÉTIS PEOPLE: A NATIONAL STUDY ON THE STATE OF MÉTIS HOUSING

### Objective:

Examine the state of housing for Métis people in the Métis homeland.

### CMHC Project Officer:

A. Wellman

### Division:

Strategic Planning and Policy  
Development Division

### Contractor:

Métis National Council  
558 Whitewood Crescent  
Saskatoon, Saskatchewan  
S7J 4L1

### CIDN:

1158 0100001

## INCREASING SELF-SUFFICIENCY: NEW FINANCING AND INVESTMENT OPPORTUNITIES FOR URBAN AND RURAL NATIVE HOUSING AUTHORITIES

### Objective:

Conduct research on options for new directions in Aboriginal housing, and to increase the self-sufficiency of native housing authorities through new financing and investment opportunities.

### CMHC Project Officer:

A. Wellman

### Division:

Strategic Planning and Policy  
Development Division

### Contractor:

Native Council of Canada  
384 Bank Street, 2nd Floor  
Ottawa, Ontario  
K2P 1V4

### CIDN:

1203 0100001



## NATIVE PEOPLE/AUTOCHTONES

### INUIT WOMEN AND HOUSING ISSUES

#### Objective:

To conduct research on housing issues relevant to Inuit women. The results of this research will be translated into Inuktitut, published and distributed throughout the North as a means of promoting public awareness and discussion of the issues.

#### CMHC Project Officer:

A. Wellman

#### Division:

Strategic Planning and Policy  
Development Division

#### Contractor:

Pauktuutit - Inuit Women's  
Association  
200 Elgin Street  
Suite 804  
Ottawa, Ontario  
K2P 1L5

#### CIDN:

1180 0100001

### SECOND STAGE HOUSING FOR ABORIGINAL WOMEN AND FRAMEWORK TO MEASURE THE IMPACT OF HOUSING CONDITIONS ON WELL-BEING OF ABORIGINAL WOMEN AND THEIR CHILDREN

#### Objective:

This two-part project has the following objectives:

- (a) Establish the need for "second-stage" housing for Aboriginal women (and their children) and develop a transferable community-based model for use across Canada.

- (b) Develop a framework to measure the impact of housing conditions on the well-being of Aboriginal women and their children (i.e., health, social impacts including family violence and sexual abuse, self-esteem, etc.).

#### CMHC Project Officer:

A. Wellman

#### Division:

Strategic Planning and Policy  
Development Division

#### Contractor:

Native Women's Association of  
Canada  
9 Melrose Avenue  
Ottawa, Ontario  
K1N 5P3

#### CIDN:

1152 0100001

### Ongoing Projects/Projets en cours

#### **FEASIBILITY STUDY AND BLUEPRINT FOR THE REDEVELOPMENT OF THE CMHC BUILDERS AND RENOVATORS WORKSHOPS TRAINING MATERIAL FOR NORTHERN BUILDERS AND RENOVATORS**

##### **Objective:**

To identify the training and development needs, options and training priorities of northern builders and renovators and to create a detailed report that will serve as the blueprint for the redevelopment of the existing CMHC builders and renovators series of workshop materials to suit the needs of northern builders and renovators.

##### **CMHC Project Officer:**

R. Duncan

##### **Division:**

Housing Innovation Division

##### **Contractor:**

Drerup-Armstrong Limited  
P.O. Box 130  
Carp, Ontario  
K0A 1L0

##### **CIDN:**

1378 0300001

#### **NORTH FILE FACT SHEETS**

##### **Objective:**

To produce fact sheets on northern building technology camera-ready for production.

##### **CMHC Project Officer:**

R. Duncan

##### **Division:**

Housing Innovation Division

##### **Contractor:**

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

##### **CIDN:**

0515 0300002

## PLAYGROUNDS/JEUX, TERRAINS DE

### Ongoing Projects/Projets en cours

#### UPDATING OF PLAYGROUND PUBLICATIONS AND SLIDE PRESENTATIONS FROM CHILDREN'S ENVIRONMENTS ADVISORY SERVICE

##### Objective:

Updating of playground publications and slides, with revisions in the areas of design, pictures, concepts and overall content to reflect changes in playground design standards and include greater emphasis on barrier-free design and injury prevention.

##### CMHC Project Officer:

P. Archer

##### Division:

Housing Innovation Division

##### Contractor:

Betty Dion Enterprises Ltd.  
458 Melbourne Avenue  
Ottawa, Ontario  
K2A 1W3

##### CIDN:

1114 0300001

## RENTAL HOUSING/LOGEMENT LOCATIF

### Ongoing Projects/Projets en cours

#### IMPACT D'UN PROGRAMME PARAMUNICIPAL SUR LE MARCHÉ DU LOGEMENT LOCATIF

##### Objet :

Déterminer si l'intervention  
PALL a eu des impacts sur le  
marché locatif avoisinant.

##### Agent de projet pour la SCHL :

M. Macpherson

##### Division :

Division de la recherche  
Programme de subventions de  
recherche

##### Contractant :

Luba Serge  
29 rue Easton  
Montréal (Québec)  
H4X 1K9

##### NIC :

1287 0200001



## Ongoing Projects/Projets en cours

### ALTERNATIVE PLANNING APPROACHES: SUMMARY AND PRESENTATION

#### Objective:

To prepare a fully illustrated fifteen page summary report on selected sections of CMHC research report entitled "Alternative Planning Approaches"; to prepare a written and visual presentation based on the fifteen page summary report; and to present the findings at the workshop on housing and infrastructure.

#### CMHC Project Officer:

D. D'Amour

#### Division:

Research Division

#### Contractor:

Essiambre Phillips  
Desjardins  
1990 City Park Drive  
Suite 206  
Ottawa, Ontario  
K1J 1A3

#### CIDN:

1420 0200002

### THE EXTERNALITIES OF RESIDENTIAL DEVELOPMENT

#### Objective:

Prepare an authoritative paper entitled "The Externalities of Residential Development". The paper shall examine several common housing-related externalities in order to foster a more comprehensive understanding of some of the direct and indirect social, economic and environmental costs/impacts associated with our houses and our communities.

#### CMHC Project Officer:

D. D'Amour

#### Division:

Research Division

#### Contractor:

Sheltair Scientific Limited  
2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

#### CIDN:

0982 0200001

### SUMMARY REPORT ON HOUSING THE NEW FAMILY

#### Objective:

To produce a document that communicates the key findings of a larger research report on new housing alternatives for non-conventional families, as part of the International Year of the Family 1994.

#### CMHC Project Officer:

D. Chamberland

#### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

#### Contractor:

Laura Johnson  
374 Sackville Street  
Toronto, Ontario  
M4X 1S5

#### CIDN:

1015 0202002

## RESIDENTIAL MOBILITY/MOBILITÉ RÉSIDENTIELLE

### Ongoing Projects/Projets en cours

#### CANADA POST MOVER INFORMATION

##### Objective:

A research study to make improvements in the timeliness and scope of information on migration flows and mover characteristics.

##### CMHC Project Officer:

G. Goy

##### Division:

Market Analysis Centre

##### Contractor:

Canada Post Corporation  
2701 Riverside Drive  
Suite NO175  
Ottawa, Ontario  
K1A 0B1

##### CIDN:

1009 1000001

## RESIDENTIAL REHABILITATION/ RÉNOVATION DE LOGEMENTS

### Completed Reports/Rapports terminés

#### A STUDY ON THE NEEDS OF CONSUMERS FOR A RESIDENTIAL RENOVATION TECHNICAL ADVISORY BOARD: A SUMMARY REPORT.

*Prepared by Pierre Filiatrault and Jean Ducharme. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, c1991, 1995.*

The purpose of this study was to survey the present and future behaviour of consumers in terms of residential renovation and, in particular, to sound out the feasibility of making available a technical advisory service in residential renovation. The survey was conducted among three focus groups (contractors and consumers) and with 601 respondents reached by telephone in the city of Montreal. The study of current consumer behaviour revealed that six consumers out of ten deal with contractors to have renovation work done, that "word of mouth" is the main means of information and that it is difficult to obtain service offers at reasonable prices and to get a good idea of the cost of the work to be carried out. A renovation work warranty was considered highly desirable. Consumers consider that the existence of an agency to assist and inform them in renovation matters is necessary. The probability that consumers will use the services of such an agency was put at 5.91 chances out of ten. The need for assistance and information in the area of renovation and the need for a warranty, combined with a sufficiently high level of intent to use the agency, argue in favour of setting up such a service.

NOTE : Aussi disponible en français sous le titre : Étude sur les besoins des consommateurs pour un service de consultation technique en rénovation domiciliaire (Compendium de recherche 1992).

### Ongoing Projects/Projets en cours

#### ASSESSMENT REPAIR STRATEGY FOR EXISTING BUILDINGS CONSTRUCTED WITH MASONRY VENEER STEEL STUD WALLS

##### Objective:

To develop an overall assessment strategy for determining the extent of repairs required for existing buildings constructed with brick veneer steel stud systems.

##### CMHC Project Officer:

J. Rousseau

##### Division:

Housing Innovation Division

##### Contractor:

T.W.J. Trestain  
573 Durie Street  
Toronto, Ontario  
M6S 3H2

##### CIDN:

0937 0300001

#### HOMEOWNER MOTIVATION AND INNER CITY REVITALIZATION: AN EXAMINATION OF RELATED FACTORS IN WINNIPEG

##### Objective:

To carry out an examination of homeowner motivation and inner city revitalization; to identify three inner city areas for analysis in the City of Winnipeg, selected on the basis of high levels of renovation activity.

##### CMHC Project Officer:

M. Macpherson

##### Division:

Research Division  
External Research Program

##### Contractor:

Christine D. McKee  
City Planning Department  
University of Manitoba  
Faculty of Architecture  
201 Russell Building  
Winnipeg, Manitoba  
R3T 2N2

##### CIDN:

1277 0200001

## **LOCAL INDICATORS OF RENOVATION SPENDING**

### **Objective:**

To carry out a study of local indicators of renovation spending; determine the reliability of current measures of renovation activity at the CMA level; make recommendations for the construction of comprehensive, reliable and timely indicators of renovation activity, and develop the indicators for selected CMAs.

### **CMHC Project Officer:**

G. Proulx

### **Division:**

Market Analysis Centre

### **Contractor:**

Clayton Research Associates Limited  
1580 Kingston Road  
Scarborough, Ontario  
M1N 1S2

### **CIDN:**

1234 1000001

## **MASONRY VENEER STEEL STUD RENOVATION STRATEGIES**

### **Objective:**

To evaluate different retrofit brick ties for repairing existing brick veneer/steel stud systems.

### **CMHC Project Officer:**

J. Rousseau

### **Division:**

Housing Innovation Division

### **Contractor:**

University of Waterloo  
Building Engineering Group  
Waterloo, Ontario  
N2L 3G1

### **CIDN:**

0787 0300001

## **PREPARE GUIDELINES FOR THE APPLICATION OF THE NATIONAL BUILDING CODE IN RENOVATION WORK**

### **Objective:**

To carry out a project to prepare guidelines for the application of the National Building code in renovation work.

### **CMHC Project Officers:**

J. Rousseau, K. Rauch

### **Division:**

Professional Services and Standards Division

### **Contractor:**

A.T. Hansen Consulting Services  
702 Roanoke Street  
Ottawa, Ontario  
K1K 2G4

### **CIDN:**

1327 0300001

## **VIDEO ON RENOVATOR TRAINING**

### **Objective:**

To develop a video on renovator training to encourage renovators to participate in the National Renovators Training Program, to encourage contractors to provide time to their staff to participate in training and to encourage ongoing training of members of the renovation industry to ensure they have adequate business-management skills to remain profitable and offer a high standard of work.

### **CMHC Project Officer:**

F. Harding

### **Division:**

Housing Innovation Division

### **Contractor:**

Canadian Home Builders Association  
150 Laurier Avenue West  
Suite 200  
Ottawa, Ontario  
K1P 5J4

### **CIDN:**

1468 0300001



### Ongoing Projects/Projets en cours

#### IMPROVEMENTS IN ON-SITE WASTEWATER TREATMENT

**Objective:**

To evaluate the performance of household water conservation, in association with an innovative technology for septic tank effluent treatment and nitrogen removal, to provide more cost-effective and reliable on-site wastewater treatment.

**CMHC Project Officer:**

A. Houston

**Division:**

Research Division

**Contractor:**

Technical University of Nova Scotia  
Centre for Water Resources Studies  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1047 0200001

#### LOWER COST ALTERNATIVE FOR MUNICIPAL SEWER INSPECTION AND MAINTENANCE

**Objective:**

To reduce subdivision servicing costs by the design, development and testing of a technically sound and innovative structure to replace, at a lower cost, the conventional manhole.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Butler Krebs & Associates Inc.  
8616 - 51 Avenue  
Suite 210  
Edmonton, Alberta  
T6E 6E6

**CIDN:**

1274 0200001

#### A NEW PROCEDURE FOR EVALUATING THE PERFORMANCE OF ON-SITE SYSTEMS

**Objective:**

To assess the value of the leachfield evaluation test; a method for assessing the hydraulic performance of an on-site sewage disposal system.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Dr. Donald H. Waller  
Technical University of Nova Scotia  
Centre for Water Resources Studies  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1289 0200001

#### **A MANAGEMENT STRATEGY FOR THE NIMBY SYNDROME: CASE STUDY = UNE STRATÉGIE DE GESTION POUR FAIRE FACE AU SYNDROME PDMC : ÉTUDE DE CAS.**

*Affordability and Choice Today (A.C.T.) Streamlined Approval Process Project / Kings Square Non-Profit Housing Corporation, Charlottetown, Prince Edward Island. Prepared by Energy Pathways Inc. Prepared for the Federation of Canadian Municipalities, Canadian Home Builders' Association, Canadian Housing and Renewal Association and Canada Mortgage and Housing Corporation. Ottawa: The Associations: The Federation: The Corporation, 1994.*

Kings Square Non-Profit Housing Corporation (Kings Square), a non-profit provider of social housing in Charlottetown, Prince Edward Island, experienced NIMBY first-hand when it proposed to establish a temporary shelter for the homeless in a residential Charlottetown neighbourhood. The NIMBY-motivated defeat of the project prompted Kings Square to undertake a study of people's attitudes towards social housing which would form the basis for a NIMBY management strategy.

Based on the findings of this study, Kings Square concluded that the best way to confront the NIMBY syndrome is to be well prepared in advance. The project team developed a management strategy to confront the NIMBY syndrome which includes the following recommendations:

- Form a NIMBY committee.
- Identify and minimize potential objections.
- Prepare for public meetings.

The management strategy can be applied to social housing projects and unconventional proposals that run the risk of causing a negative local reaction. While it is unlikely that any strategy will eliminate opposition entirely, the management strategy developed by the project team could help to turn the scales in favour of a project, with a majority of residents supporting the project rather than opposing it.

NOTE: *Bilingual/bilingue.*

## SOCIAL HOUSING/LOGEMENT SOCIAL

### UNE STRATÉGIE DE GESTION POUR FAIRE FACE AU SYNDROME PDMC : ÉTUDE DE CAS = A MANAGEMENT STRATEGY FOR THE NIMBY SYNDROME: CASE STUDY.

*Abordabilité et choix toujours (A.C.T.) projet de simplification du processus d'approbation / Kings Square Non-Profit Housing Corporation, Charlottetown (Île-du-Prince-Édouard). Préparé par Energy Pathways Inc. Préparé pour la Fédération canadienne des municipalités, L'Association canadienne des constructeurs d'habitations, L'Association canadienne d'habitation et de rénovation urbaine et La Société canadienne d'hypothèques et de logement. Ottawa : Les Associations : La Fédération : La Société, 1994.*

La Kings Square Non-Profit Housing Corporation (Kings Square), un organisme sans but lucratif qui fournit des logements sociaux à Charlottetown (Î.-P.-É.), était aux premières loges lorsqu'elle a connu le syndrome PDMC; elle avait proposé de créer un centre d'hébergement temporaire pour les sans-abri dans un secteur résidentiel de Charlottetown. Le projet a été défait à cause du syndrome PDMC; Kings Square a alors entrepris une étude sur les attitudes de la population envers le logement social. Cette étude devrait servir de fondement à la stratégie de gestion du syndrome PDMC.

En se fondant sur les constatations de cette étude, Kings Square a conclu que la meilleure façon d'atténuer le syndrome PDMC était de bien se préparer à l'avance. L'équipe de projet a élaboré une stratégie de gestion pour contrer le syndrome PDMC; elle a fait les recommandations suivantes :

- créer un comité PDMC;
- cerner et minimiser les oppositions éventuelles;
- préparer des réunions publiques.

La stratégie de gestion peut être utilisée dans le cas d'ensembles de logement social et de propositions inhabituelles qui courent le risque de causer une réaction locale négative. Même s'il est peu probable qu'une stratégie quelconque puisse éliminer toute opposition, la stratégie de gestion élaborée par l'équipe de projet pourrait aider à faire pencher la balance en faveur d'un projet en obtenant l'appui d'une majorité de résidents.

NOTE : Bilingue/bilingual.

### Ongoing Projects/Projets en cours

#### ANALYSIS OF THE RELATIVE COST AND EFFECTIVENESS OF SELECTED SOCIAL RENTAL HOUSING PROGRAMS

##### Objective:

To assess the effectiveness of selected rental housing programs in addressing the problems of affordability, adequate supply, and housing quality. The study will determine how traditional non-profit supply programs and shelter allowances perform, over time under different market conditions.

##### CMHC Project Officer:

J. Beaupré

##### Division:

Senior Vice-President's Office  
Policy, Research and  
Communications

##### Contractor:

Canadian Housing and  
Renewal Association  
251 Laurier Avenue West  
Suite 304  
Ottawa, Ontario  
K1P 5J6

##### CIDN:

1351 0600001



## **CREATION OF THE LONGITUDINAL ADMINISTRATIVE DATABASE (LAD) AND LINKAGE OF SOCIAL HOUSING DATA**

### **Objective:**

To create a longitudinal database of Canadian individuals, including a sample of residents of social housing with their family characteristics over the period from 1982 to 1993. The database will permit analysis of the dynamics of income, employment and family composition among Canadian households.

### **CMHC Project Officer:**

D. Chamberland

### **Division:**

Research Division  
Centre for Future Studies in Housing and Living Environments

### **Contractor:**

Statistics Canada  
26th Floor, RHC  
Tunney's Pasture  
Ottawa, Ontario  
K1A 0T6

### **CIDN:**

0895 0200001

## **DEMONSTRATION STUDY OF RESIDENT PARTICIPATION IN THE FLEMINGDON PARK COMMUNITY**

### **Objective:**

To carry out a demonstration study of resident participation in the Flemingdon Park Community.

### **CMHC Project Officer:**

P. Brown

### **Division:**

Strategic Planning and Policy Development Division

### **Contractor:**

Partners in Equality  
17 Yarmouth Gardens  
Toronto, Ontario  
M6G 1W3

### **CIDN:**

1195 0100001

## **DEVELOPMENT OF INDICATORS OF QUALITY OF LIFE, HEALTH AND WELL-BEING IN CANADIAN SOCIAL HOUSING: IDENTIFICATION OF INDICATORS OF HEALTH PROMOTING SOCIAL HOUSING SETTINGS**

### **Objective:**

To develop indicators of health and well-being which would apply to social housing and could be used by CMHC for research, policy analysis and program evaluation.

### **CMHC Project Officer:**

D. Chamberland

### **Division:**

Research Division  
Centre for Future Studies in Housing and Living Environments

### **Contractor:**

Veronica Doyle  
1317 Richardson Street  
Victoria, British Columbia  
V8S 1P6

### **CIDN:**

1023 0200003

## **1995 EXPERTS ROUND TABLE - INDICATORS OF QUALITY OF LIFE, HEALTH AND WELL-BEING IN ASSISTED HOUSING**

### **Objective:**

To participate in a one-day round table of American and Canadian experts at HUD in Washington to discuss the development by HUD/CMHC of indicators and measures of quality of life, health and well-being for application in assisted housing environments.

### **CMHC Project Officer:**

S. Mockler

### **Division:**

Research Division  
Centre for Future Studies in Housing and Living Environments

### **Contractors:**

B. C. Ministry of Housing  
Recreation & Consumer Services  
1019 Wharf Street  
Victoria, British Columbia  
V8V 1X4

Institute of Urban Studies  
University of Winnipeg  
515 Portage Avenue  
Winnipeg, Manitoba  
R3B 2E9

Dr. Ian McDowell  
1467 Rhea Place  
Gloucester, Ontario  
K1G 3N3

Dr. William R. Avison  
University of Western Ontario  
3rd Floor E.S. Bldg  
Centre for Health and Well-Being  
London, Ontario  
N6A 5B9

### **CIDN:**

1416 0200004  
1416 0200001  
1416 0200002  
1416 0200003



## SUSTAINABLE DEVELOPMENT/ DÉVELOPPEMENT DURABLE

### Completed Reports/Rapports terminés

#### LE DÉVELOPPEMENT DURABLE ET LES VILLES CANADIENNES : ÉTUDES DE CAS.

*Rapports divers du Programme canadien des changements à l'échelle du globe, rapport n° IR94-1. Préparé par Ray Tomalty et David Pell. Préparé pour le Centre d'études prospectives sur l'habitation et le cadre de vie, Société canadienne d'hypothèques et de logement et pour le Programme canadien des changements à l'échelle du globe de La Société royale du Canada. Ottawa : SCHL : Société royale du Canada, 1994.*

Ce rapport constitue un précieux document d'information sur les initiatives de développement durable menées dans certaines villes canadiennes. Dans la première partie on décrit brièvement le contexte dans lequel s'opère la modification des méthodes de planification et de gestion des villes et l'appui croissant qu'obtient cette nouvelle approche. On y relève les principes essentiels d'un plan de développement urbain soit, la collectivité, l'équité, l'auto-détermination, l'intégration, l'équilibre et la diversité. On suggère également dans cette partie que la gestion des villes doit nécessairement mettre en jeu la coordination, la collaboration et le partenariat entre les gouvernements, le monde des affaires, les organisations non-gouvernementales et les collectivités.

La deuxième partie du rapport est une synthèse complète et concise des activités locales qui règlent les préoccupations environnementales. Il s'agit de programmes et de lignes de conduite consacrés à des problèmes environnementaux particuliers comme les changements atmosphériques, la gestion et la réduction des déchets, la qualité de l'eau, la conservation de l'énergie, et la foresterie urbaine. On y mentionne les occasions qu'utilisent les organisations locales pour effectuer des changements, notamment toutes sortes de stratégies et de programmes dans les domaines suivants : l'administration et la gestion, le développement économique, la collecte d'information, la participation du public, la société et la culture, les transports, l'utilisation des sols et leur aménagement.

NOTE: Issued also in English under the title: Sustainable Development and Canadian Cities: Current Initiatives

## SUSTAINABLE DEVELOPMENT AND CANADIAN CITIES: CURRENT INITIATIVES.

*Canadian Global Change Program Incidental Report Series, No. IR94-1. Prepared by Ray Tomalty and David Pell. Prepared for the Centre for Future Studies in Housing and Living Environments, Canada Mortgage and Housing Corporation and the Canadian Global Change Program of the Royal Society of Canada. Ottawa: CMHC: Royal Society of Canada, 1994.*

This report is a valuable resource document on sustainable development initiatives in Canadian cities. Part I of the report provides a brief background of the changes and the increasing support for a new approach to the planning and management of cities. It identifies community, equity, self-determination, integration, balance and diversity as essential principles of a sustainable urban development plan. Part I suggests that more coordination, cooperation and partnerships are necessary between governments, businesses, non-governmental organizations and communities in the management of cities.

The second part of the report provides a comprehensive and concise synthesis of local activities which address environmental concerns. These activities include programmes and policies which address specific environmental issues like atmospheric change, waste management and reduction, water quality, energy conservation, and urban forestry. It also identifies the opportunities which local organisations use to effect change. These opportunities encompass a range of strategies and programs in administration and management, business development, information gathering, public involvement, society and culture, transportation, and land use and development.

NOTE : Aussi disponible en français sous le titre : Le Développement durable et les villes canadiennes : études de cas.

## Ongoing Projects/Projets en cours

### CMHC COLLABORATION WITH FCM CONCERNING THE OECD PROJECT GROUP ON THE ECOLOGICAL CITY

#### Objective:

To produce a draft national overview paper and undertake other activities to represent Canada in relation to the project of the Organization for Economic Cooperation and Development (OECD) entitled "The Ecological City".

#### CMHC Project Officer:

P. Spurr

#### Division:

International Relations  
Division

#### Contractor:

Federation of Canadian  
Municipalities  
24 Clarence Street  
Ottawa, Ontario  
K1N 5P3

#### CIDN:

1313 0900001

### THE DEVELOPMENT OF ALTERNATIVE SITE PLAN FOR THE CMHC NATIONAL OFFICE LANDS

#### Objective:

Using CMHC National Office lands as a case study, this project will develop alternative site plans which respond to the imperatives of sustainable suburban development. The study will assess and document the constraints and impediments to more sustainable subdivision plans.

#### CMHC Project Officer:

D. Chamberland

#### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

#### Contractor:

Barry J. Hobin & Assoc. Arch.  
Inc.  
Glebe Chambers  
711 Bank Street  
Ottawa, Ontario  
K1S 3V1

#### CIDN:

1205 0200001

## SUSTAINABLE DEVELOPMENT/ DÉVELOPPEMENT DURABLE

### HEALTHY BUILDINGS "95" INTERNATIONAL CONFERENCE

**Objective:**

Contribution to Healthy Buildings '95 Conference to provide a forum for the exchange of information on the design, construction and operation of healthy buildings in mild climates.

**CMHC Project Officer:**

J. White

**Division:**

Research Division

**Contractor:**

Professor Marco Maroni  
C/O International Centre for  
Pesticide Safety  
Via Magenta 25  
Busto Garolfo, Italy  
20020

**CIDN:**

1385 0200001

### HEALTHY HOUSING DEMONSTRATION

**Objective:**

The construction of a demonstration autonomous house in Toronto in general accordance with the winning housing design in CMHC's healthy housing design competition.

**CMHC Project Officer:**

J. Robar

**Division:**

Research Division

**Contractor:**

Liefhebber, Martin Architect  
Inc.  
177 First Avenue  
Toronto, Ontario  
M4M 1X3

**CIDN:**

0779 0202003

### 1995 NATIONAL WORKSHOP ON URBAN SUSTAINABILITY INDICATORS

**Objective:**

To bring together approximately 50 invited experts and practitioners to discuss issues and exchange information related to the implementation and support of urban indicators in Canada.

**CMHC Project Officer:**

D. Leong

**Division:**

Strategic Planning and Policy  
Development Division

**Contractor:**

Environment Canada  
State of Environment  
Directorate  
Place Vincent Massey  
351 St. Joseph Boulevard  
9th Floor  
Hull (Québec)  
K1A 0H3

**CIDN:**

1447 0200001

### PERFORMANCE MONITORING OF THE VANCOUVER HEALTHY HOUSE

**Objective:**

To monitor and analyze the performance (energy usage, water consumption and indoor air quality) of CMHC's Vancouver Healthy House.

**CMHC Project Officer:**

C. Ives

**Division:**

Research Division

**Contractor:**

SAR Engineering Ltd.  
8884-15th Avenue  
Burnaby, British Columbia  
V3N 1Y3

**CIDN:**

0779 0203018

### TESTING CONSUMER RECEPTIVITY TO SUSTAINABLE AND MORE AFFORDABLE SUBURB DESIGN IN CALGARY

**Objective:**

To address the question: are Canadian consumers (houseseekers, homebuyers) receptive to residential community design that incorporates sustainable development principles and performance characteristics?

**CMHC Project Officer:**

F. Grammenos

**Division:**

Research Division  
External Research Program

**Contractor:**

William T. Perks  
Faculty of Environmental  
Design  
Calgary University  
2500 University Drive, N.W.  
Earth Sciences  
Calgary, Alberta  
T2N 1N4

**CIDN:**

1278 0200001

## TELEWORK/TÉLÉTRAVAIL

### Ongoing Projects/Projets en cours

#### **SUMMARY REPORT - PLANNING FOR TELEWORK AND HOME-BASED EMPLOYMENT**

##### **Objective:**

To complete tasks related to the study "Planning for Telework and Home-Based Employment".

##### **CMHC Project Officer:**

D. Chamberland

##### **Division:**

Research Division  
Centre for Future Studies and  
Living Environments

##### **Contractor:**

University of British Columbia  
C/O UBC Research Services  
2194 Health Sciences Mall  
Room 323  
Vancouver, British Columbia  
V6T 1Z3

##### **CIDN:**

1010 0201001



### Ongoing Projects/Projets en cours

#### LES ENSEMBLES RÉSIDENTIELS ET LA SÉCURITÉ ROUTIÈRE

**Objet :**

La présente recherche porte sur l'étude des rapports entre la forme des milieux résidentiels et la sécurité des déplacements des différents usagers de la route.

**Agent de projet pour la SCHL :**

M. Macpherson

**Division :**

Division de la recherche  
Programme de subventions de recherche

**Contractant :**

Denise Piché  
École d'architecture  
Université Laval  
Québec (Québec)  
G1K 7P4

**NIC :**

0925 0200001

#### PAYSAGES DE L'INTÉRIEUR DANS L'ÎLE DE MONTRÉAL

**Objet :**

Cette étude part de la prémisse que le paysage public montréalais a été principalement conçu à partir de courants de pensées externes certains étant bien connus, identifiés et documentés, mais que par contre on ne sait presque rien sur le sens qu'accordent des Montréalais à leur paysage à travers leurs propres interventions et commandes paysagères.

**Agent de projet pour la SCHL :**

M. Macpherson

**Division :**

Division de la recherche  
Programme de subventions de recherche

**Contractant :**

Madame Danièle Routaboule  
École d'Architecture de Paysage  
Université de Montréal  
5620, rue Darlington  
Montréal (Québec)  
H3C 3J7

**NIC :**

1284 0200001

#### PRESENTATION AT THE OECD CONFERENCE, INDICATORS FOR URBAN POLICIES - RENNES, FRANCE

**Objective:**

To prepare and deliver a presentation on the innovative experience of the contractor with urban indicators, at the international conference entitled Indicators for Urban Policies, April 3-4, Rennes, France.

**CMHC Project Officer:**

P. Spurr

**Division:**

International Relations  
Division

**Contractor:**

Regional Municipality of  
Hamilton-Wentworth  
119 King Street, West  
15th Floor  
Hamilton, Ontario  
L8N 3V9

**CIDN:**

1077 0900001

#### **EASE DEMONSTRATION PROJECT: APCHQ'S ADVANCED HOUSE.**

*Prepared by Mark Lawton and David L. Scott, Morrison Hershfield Limited. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation and the Association provinciale des constructeurs d'habitations du Québec. Ottawa: CMHC, 1995.*

The EASE Air Barrier System consists of a sheet of Tyvek sandwiched between two layers of fiberboard on the exterior side of the insulation. This system was used in APCHQ's (Association provinciale des constructeurs d'habitations du Québec) entry for the Advanced House Program. As part of the monitoring program on this house, long-term measurements of pressures, temperatures and relative humidities across the various layers of the wall systems were recorded. Morrison Hershfield was engaged to develop the house's air barrier construction details, analyze the monitoring data and draw conclusions on the performance of the EASE air barrier system.

The monitoring data indicated that the temperature within the insulated cavity always remained above the dewpoint temperature of the air in the cavity. Data extrapolated to estimate temperature at the EASE air barrier itself indicated that there may have been occasions of condensation occurring at this exterior surface in certain weather conditions. Since this did not affect moisture levels further in the cavity, the consultants assumed that this did not create a problem and probably diffused through the vapour permeable EASE Air Barrier System.

In both monitored wall sections, one with brick cladding and one with stucco cladding, pressure monitoring showed that pressure loads across the air barrier membrane were quite small. The peak pressure recorded across the wall system was in the order of 275 Pa. The majority of the pressure across the wall system as a whole was carried by the exterior cladding materials. Since airtightness testing showed that the wall system was relatively airtight, it was concluded that the lack of compartmentalization in the cavity between cladding and air barrier system limited pressure equalization across the cladding. This sheltered the air barrier membrane from both peak and average pressures.

NOTE : Aussi disponible en français sous le titre : Projet de démonstration du pare-air extérieur (EASE) : maison performante de L'APCHQ

#### **ESSAIS DE VENTILATION ET DE QUALITÉ DE L'AIR DANS DES MAISONS CHAUFFÉES À L'ÉLECTRICITÉ.**

*Préparé par Stricker Associates Inc. en collaboration avec Laboratoire des technologies électrochimiques et des électrotechnologies (LTÉE) d'Hydro-Québec. Préparé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994.*

Cette étude sur le terrain visait à déterminer s'il existe une corrélation entre l'étanchéité à l'air mesurée et la ventilation, d'une part, et la qualité de l'air intérieur, d'autre part, ainsi qu'à examiner les principaux facteurs qui déterminent les taux d'humidité intérieure en automne et en hiver. Ces renseignements sont nécessaires pour qu'il soit possible de déterminer s'il existe des niveaux d'étanchéité à l'air des immeubles qui se caractérisent par une absence de problème de qualité de l'air intérieur et d'humidité excessive. Le rapport présente les résultats d'essais qui avaient pour but de mesurer le taux d'émission des polluants de divers polluants de l'air intérieur dans trente maisons du Québec et compare les chiffres obtenus à des données comparables concernant des maisons situées en Ontario. Ces renseignements permettent d'évaluer la ventilation minimale requise pour maintenir le niveau des divers polluants à des taux acceptables.

## VENTILATION/VENTILATION

Dans huit des trente maisons, on a également procédé à des observations supplémentaires qui avaient pour but d'étudier les effets des habitudes de vie et de divers systèmes de ventilation sur la qualité de l'air et le taux d'humidité à l'intérieur des maisons, de même qu'à évaluer les taux de ventilation réels dans divers circonstances. On s'est servi du modèle AQ1 pour prédire le taux de ventilation naturel de plusieurs maisons. Les constatations révèlent que la corrélation entre l'étanchéité à l'air mesurée et la ventilation naturelle (et la qualité de l'air intérieur) doit tenir compte de nombreux facteurs, dont l'utilisation d'équipement de combustion, les caractéristiques de la maison et les habitudes de vie. Dans la plupart des maisons, il arrive, par moments, que le taux de ventilation naturelle soit suffisamment bas pour que le niveau de certains polluants dépasse le taux maximum recommandé.

Le rapport conclut que la corrélation entre la qualité de l'air intérieur et l'étanchéité à l'air mesurée est faible et que toute maison, qu'elle soit hermétique ou non, peut avoir des taux de pollution excessifs. Certaines des activités des occupants influent grandement sur la production de certains contaminants de l'air. Les polluants limitatifs relevés dans le groupe de maisons visées par l'étude étaient le formaldéhyde, les particules respirables en suspension (PRS) et le bioxyde de carbone, les proportions étant à peu près équivalentes.

NOTE: Also available in English under the title: Ventilation and Air Quality Testing in Electrically Heated Housing.

### **PERFORMANCE OF VENTILATION SYSTEMS: DEMONSTRATION OF SYSTEMS DESIGNED TO A PRESCRIPTIVE STANDARD WITH STUDIES OF THE CONTROLS, NOISE, AIR FLOW AND DISTRIBUTION.**

*Prepared by Richard Lind, Everts-Lind Enterprises. Prepared for Research Division, Canada Mortgage and Housing Corporation and the Federal Interdepartmental Panel on Energy Research and Development (PERD). Ottawa: CMHC, 1993.*

CMHC initiated a research project to develop and demonstrate prescriptive guidelines for simple, effective, low-cost ventilation systems. This project looked at the systems developed for houses heated by baseboard or radiant heating systems. The project evaluated the performance (air flow, noise, energy consumption, etc.) of three ventilation systems employed in five test houses in Nova Scotia. The systems consisted of: two exhaust-only systems; two ducted heat recovery ventilation (HRV) systems; and one balanced supply/recirculation/exhaust system. Two ventilation system control strategies were also developed and evaluated.

All five ventilation systems were found to be relatively easy to design and install. The occupants of the houses provided with the exhaust-only and HRV systems were satisfied with the performance of the systems. Tracer gas decay tests of the house with the exhaust-only system showed that the system could induce the overall air change rate required by the 1990 National Building Code. The balanced supply/recirculation/exhaust system caused occupant comfort problems due to insufficient tempering of incoming fresh air. The noise generated by the ventilation systems was generally within ASHRAE guidelines.

The time-of-day control strategy was preferred to the outdoor temperature strategy by most occupants because of its effectiveness, predictability and automatic operation. Occupants reacted negatively to the temperature controller citing irregular and less effective operation of the ventilation system.



## **PROJET DE DÉMONSTRATION DU PARE-AIR EXTÉRIEUR (EASE) : MAISON PERFORMANTE DE L'APCHQ**

*Préparé par Mark Lawton et David L. Scott, Morrison Hershfield Limited. Présenté à la Société canadienne d'hypothèques et de logement, Division de l'innovation dans l'habitation et l'Association provinciale des constructeurs d'habitations du Québec. Ottawa : SCHL, 1995.*

Le pare-air extérieur est constitué par une membrane Tyvek intercalée entre deux couches de panneau de fibres, du côté de l'isolant. Ce pare-air a été proposé par l'APCHQ aux termes du Programme de la maison performante. Dans le cadre du contrôle de cette maison, on a prélevé sur une longue période la pression, la température et le degré d'humidité relative de différentes couches des systèmes muraux. Les services de Morrison Hershfield ont été retenus pour mettre au point la technique d'exécution du pare-air de la maison, analyser les données de contrôle et tirer des conclusions quant à la performance du pare-air extérieur.

Les données de contrôle indiquent que la température à l'intérieur de la cavité isolée demeure toujours au-dessus de la température du point de rosée le l'air s'y trouvant. Les données extrapolées en vue d'estimer la température à l'endroit du pare-air extérieur prorement dit indiquent qu'il se pourrait qu'il se forme de la condensation sur cette face extérieure dans certaines conditions climatiques. Puisque cela n'a pas davantage influé sur le degré d'humidité dans la cavité, nous pouvons présumer que la présence de condensation n'a pas occasionné de problème et qu'elle s'est probablement diffusée à travers le pare-air extérieur, perméable à la vapeur.

Dans les deux sections murales contrôlées, l'une présentant un placage de brique et l'autre un parement de stucco, le contrôle de la pression a permis de découvrir que le pare-air ne subissait que d'assez faibles charges. La pression de pointe enregistrée sur le système mural était de l'ordre de 275 Pa. La majorité de la pression enregistrée sur l'ensemble du système mural était portée par le parement extérieur. Étant donné que les essais d'étanchéité à l'air révèlent que le système mural était relativement étanche à l'air, on a conclu que le manque de compartimentation dans la cavité formée entre le parement et le pare-air limitait l'équilibrage de la pression sur le parement. Cette situation mettait le pare-air à l'abri à la fois des pressions de pointe et des pressions moyennes.

NOTE: Also available in English under the title: EASE Demonstration Project: APCHQ's Advanced House.

## **VENTILATION AND AIR QUALITY TESTING IN ELECTRICALLY HEATED HOUSING.**

*Prepared by Stricker Associates Inc. in collaboration with Laboratoire des technologies électrochimiques et des électrotechnologies (LTÉE) d'Hydro-Québec. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

The objectives of this field study were to determine if there is a correlation between measured airtightness and ventilation, as well as indoor air quality, and to investigate the main factors which determine indoor humidity levels in the fall and winter. This information is required to determine if there is a range of building airtightness, within which there are no indoor air quality or high humidity problems. Test results of measurements of source strength of various indoor air pollutants in thirty houses in Quebec are presented and compared with similar data obtained from houses in Ontario. With this information, the minimum ventilation required to keep the levels of the various pollutants within acceptable levels can be estimated.



## VENTILATION/VENTILATION

Additional observations were also made in eight of these houses to study the effects of living habits and of various ventilation systems on the quality of indoor air and on indoor humidity levels, and to estimate the actual ventilation rates under various operating conditions. The AQ1 model was used to predict the natural ventilation rate in several houses. The findings indicate that the correlation between measured airtightness and natural ventilation (and indoor air quality) must take into account many factors including the use of combustion equipment, building characteristics and living habits. Most houses experience periods of time during which the amount of natural ventilation is low enough that certain air pollutants rise above the maximum recommended levels.

The report concludes that the correlation between indoor air quality and measured airtightness is poor, and that leaky houses as well as airtight houses can experience excessive indoor pollution levels. Certain activities of the occupants strongly influence the production of certain air contaminants. The limiting pollutants in the group of houses tested were fairly evenly distributed among the following three contaminants: formaldehyde, respirable solid particles (RSP) and carbon dioxide.

NOTE : Aussi disponible en français sous le titre : Essais de ventilation et de qualité de l'air dans des maisons chauffées à l'électricité.

### Ongoing Projects/Projets en cours

#### DEVELOPMENT OF EFFICIENCY IMPROVEMENT TIMELINESS FOR RESIDENTIAL VENTILATION EQUIPMENT

##### Objective:

To assemble information on residential mechanical ventilation equipment (fans, blowers, heat exchangers), and to develop a consensus on how quickly the efficiency of these devices can and should be improved over the next decade.

##### CMHC Project Officer:

J. White

##### Division:

Research Division

##### Contractor:

Buchan Lawton Parent Ltd.  
5370 Canotek Road  
Ottawa, Ontario  
K1J 8X7

##### CIDN:

1242 0200001

#### ELECTRONIC SMOKE PENCIL

##### Objective:

The design and development of a battery operated electronic air leakage detection device.

##### CMHC Project Officer:

M. Macpherson

##### Division:

Research Division  
Housing Technology  
Incentives Program

##### Contractor:

Singmin Enterprises  
9 Milne Crescent  
Kanata, Ontario  
K2K 1H7

##### CIDN:

1269 0200001

#### FIELD INVESTIGATION OF AIRTIGHTNESS, AIR MOVEMENT, INDOOR AIR QUALITY AND ENERGY OF MID-RISE RESIDENTIAL BUILDINGS

##### Objet:

Le but de cette étude est de déterminer le taux de renouvellement d'air, le mouvement de l'air, les concentrations de polluants et une vérification énergétique de dix bâtiments de la Société d'habitation du Québec.

##### Agent de projet pour la SCHL :

J. Rousseau

##### Division:

Division de l'innovation dans l'habitation

##### Contractant:

Société d'habitation du Québec  
1054, rue Conroy  
Aile Saint-Amable  
3e étage  
Québec (Québec)  
G1R 5E7

##### NIC:

1330 0300001

**FIELD STUDY OF OCCUPANT INTERACTIONS AND VENTILATION EFFECTIVENESS OF HEAT RECOVERY VENTILATION SYSTEMS**

**Objective:**

To conduct a field study of occupant interactions and ventilation effectiveness of heat recovery ventilation systems.

**CMHC Project Officer:**

D. Hill

**Division:**

Research Division  
Panel on Energy R & D

**Contractor:**

Buchan Lawton Parent Ltd.  
Suite 210  
30 East Beaver Creek  
Richmond Hill, Ontario  
L4B 1G6

**CIDN:**

1376 0800001  
1376 0200001

**HARMONIZATION OF VENTING TERMINOLOGY**

**Objective:**

To identify all Canadian and United States of America codes and standards that use venting terms, developing a set of harmonized terms and definitions used in venting codes and standards.

**CMHC Project Officer:**

J. White

**Division:**

Research Division

**Contractor:**

Buchan Lawton Parent Ltd.  
5370 Canotek Road  
Ottawa, Ontario  
K1J 8X7

**CIDN:**

1078 0200001

**PARA-AIR RIGIDE**

**Objet :**

Identifier les différents matériaux pouvant être utilisés pour la réalisation d'un pare-air en panneaux rigides en tenant compte de différents types d'application définis.

**Agent de projet pour la SCHL :**

M. Macpherson

**Division :**

Division de la recherche  
Programme de subventions de recherche

**Contractant :**

Mario V. Petrone  
200 - 2545 rue Delorimier  
Longueuil (Québec)  
J4K 3P7

**NIC:**

1280 0200001

**PRESSURE MODERATED SCREENED WALL SYSTEMS**

**Objective:**

To study the mechanics involved and to attempt to quantify the number, nature and location of vents in the exterior screen of per walls for optimum ventilation drying and pressure moderation; to measure the extent and mechanism of ventilation drying in an idealized per wall; and to measure the extent and mechanism of pressure moderation in an idealized per wall.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Eric F.P. Burnett  
University of Waterloo  
Waterloo, Ontario  
N2L 3G1

**CIDN:**

1273 0200001

**SCIENTIFIC RESEARCH AND DEVELOPMENT CONCERNING VENTILATION SYSTEMS FOR NEW AND EXISTING HOUSES WITH ELECTRIC BASEBOARD HEATING**

**Objective:**

To identify designs of simple ventilation air distribution systems that are suitable for new and existing houses that lack fully ducted forced-air heating systems.

**CMHC Project Officer:**

D. Hill

**Division:**

Research Division

**Contractor:**

National Research Council  
Institute for Research in Construction  
Building M-20  
Ottawa, Ontario  
K1A 0R6

**CIDN:**

1124 0800001

## VENTILATION/VENTILATION

### **TEST-RIG FOR EVALUATING RESIDENTIAL MOTOR-FAN SET PERFORMANCE**

#### **Objective:**

Development and testing of a device for testing the performance of residential ventilating equipment.

#### **CMHC Project Officer:**

J. White

#### **Division:**

Research Division  
Panel on Energy R & D

#### **Contractor:**

Sheltair Scientific Ltd.  
2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

#### **CIDN:**

1368 0800001  
1368 0200001

### **VENTILATION CONTROL IN MEDIUM AIRTIGHTNESS HOUSES**

#### **Objective:**

To investigate the variation of pollutant source strengths in 20 medium airtightness houses; to compare the ventilation rates of these houses to those proposed in the 1995 National Building Code; to check the effectiveness of ventilation system control through the use of an outdoor temperature sensor.

#### **CMHC Project Officer:**

D. Fugler

#### **Division:**

Research Division  
Panel on Energy R & D

#### **Contractor:**

Saskatchewan Research  
Council  
Building Science Division  
15 Innovation Boulevard  
Saskatoon, Saskatchewan  
S7N 2X8

#### **CIDN:**

1179 0800001  
1179 0200001

## WATER CONSERVATION/EAU – CONSERVATION

### Ongoing Projects/Projets en cours

#### HIGH FREQUENCY WATER SHUT OFF CONTROL

**Objective:**

Develop a working prototype  
of the high frequency water  
shut off control unit.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
Housing Technology  
Incentives Program

**Contractor:**

Victor J. Diduck  
755 Kyle Drive  
Kamloops, British Columbia  
V2B 7J5

**CIDN:**

1265 0200001



## WINDOWS/FENÊTRES

### Ongoing Projects/Projets en cours

#### **MEASUREMENT OF SPECTRAL TRANSMITTANCE OF REPRESENTATIVE GLAZING SAMPLES**

##### **Objective:**

To obtain the spectral transmittance data of a representative group of window glazings including two-pane and three-pane assemblies with and without low-emissivity coatings; to present the data in a manner that would allow comparisons of the spectral characteristics of the window assemblies.

##### **CMHC Project Officer:**

V. Salares

##### **Division:**

Research Division

##### **Contractor:**

University of Calgary  
Centre for Livable  
Communities  
2500 University Drive N.W.  
Calgary, Alberta  
T2N 0G3

##### **CIDN:**

1214 1100004

#### **A SURVEY OF HEALTH EFFECTS OF LOW-E WINDOWS**

##### **Objective:**

To determine if there is any existing evidence of a possible health impact of low-e windows on people.

##### **CMHC Project Officer:**

V. Salares

##### **Division:**

Research Division

##### **Contractor:**

Murray Waldman  
Suite 1200  
191 Lombard Avenue  
Winnipeg, Manitoba  
R3B 0X1

##### **CIDN:**

1214 1100002

**LES FEMMES ET LA VILLE : LOGEMENT, SERVICES ET ENVIRONNEMENT URBAIN : COMPTE RENDU DE LA CONFÉRENCE INTERNATIONALE DE L'OCDE, PARIS (FRANCE), 4-5 OCTOBRE 1994 = WOMEN IN THE CITY: HOUSING SERVICES AND THE URBAN ENVIRONMENT: REPORT ON OECD'S INTERNATIONAL CONFERENCE, PARIS, FRANCE, OCTOBER 4-6, 1994.**

*Ottawa : Division des relations internationales, Société canadienne d'hypothèques et de logement, 1994.*

Ce document rend compte d'une conférence intitulée "Les femmes et la ville : logement, services et environnement urbain" qui s'est tenue au siège de l'Organisation de coopération et de développement économiques (OCDE), à Paris, du 4 au 6 octobre 1994. La conférence comportait trois thèmes majeurs : les femmes et les politiques urbaines; les logements et les cadres de vie; et les services urbains. Elle a porté principalement sur la reconnaissance des préoccupations féminines et des différences selon le sexe comme faisant partie intégrante de la gestion urbaine et sur la prise en compte de celles-ci dans l'orientation générale des affaires urbaines. Ce rapport fait la synthèse des communications présentées à la conférence et résume les conclusions de la présidente.

NOTE : *Bilingue/bilingual.*

**RESPONDING TO DIVERSITY: HOUSING DEVELOPED BY AND FOR WOMEN.**

*Prepared by Gerda R. Wekerle. Reprinted from Canadian Journal of Urban Research, Volume 2, Number 2, (December 1993). Ottawa: Canada Mortgage and Housing Corporation, 1994.*

In the last 10 years, there has been an unprecedented increase in housing projects in Canada specifically targeted to women and developed by women. Women's groups have emerged as new actors in the housing system, developing non-profit housing to fill gaps in both shelter and service provision. Direct service providers, housing advocacy groups, and women's community groups have become developers of permanent affordable housing for women. In the process, they have pioneered new housing models that incorporate essential service components including childcare, life skills training and participatory housing management.

In Canada, women's housing projects are characterized by diversity: several are designed for teenage mothers and their children; single parents have developed non-profit housing projects across the country; lesbians have developed their own non-profit housing co-operatives; women over the age of forty in four cities have developed non-profit housing co-operatives that will allow them to age in place. Immigrant, visible minority, and Aboriginal women have developed housing that responds to their unique cultural needs. This paper outlines the strategies used by women's groups to meet their housing needs, including learning housing development skills, obtaining funding, developing appropriate support services and implementing an ongoing process of housing management.

## WOMEN/FEMMES

### **WOMEN IN THE CITY: HOUSING SERVICES AND THE URBAN ENVIRONMENT: REPORT ON OECD'S INTERNATIONAL CONFERENCE, PARIS, FRANCE, OCTOBER 4-6, 1994 = LES FEMMES ET LA VILLE : LOGEMENT, SERVICES ET ENVIRONNEMENT URBAIN : COMPTE RENDU DE LA CONFÉRENCE INTERNATIONALE DE L'OCDE, PARIS (FRANCE), 4-5 OCTOBER 1994.**

*Ottawa: International Relations Division, Canada Mortgage and Housing Corporation, 1994.*

This paper reports on a conference entitled "Women in the City: Housing, Services and the Urban Environment" which was held at the Organization for Economic Co-operation and Development (OECD) in Paris, October 4-6, 1994. The conference was organized around three major themes: women and urban policies; housing and neighbourhood environments; and urban services. It focused on recognizing women and gender issues as integral parts of urban management and on bringing women and gender into the mainstream of urban affairs. This report provides a synthesis of the papers presented at the conference and summarizes the conclusions of the conference chairperson.

NOTE: *Bilingual/bilingue.*

### **Ongoing Projects/Projets en cours**

#### **INVESTIGATION OF ISSUES FOR THE EVALUATION OF THE NEXT STEP PROGRAM**

##### **Objective:**

Review all relevant reports and studies in the field of shelters to assist women from violent situations, with special emphasis on studies related to longer-term, second-stage housing approaches. The study will consider relevant information from Canada, the U.S., Australia, the U.K. and any other international experience.

##### **CMHC Project Officer:**

P. Streich

##### **Division:**

Program Evaluation Division

##### **Contractor:**

Janet McClain  
4C View Avenue  
P.O. Box 1166  
Wolfview, New Brunswick  
B0P 1X0

##### **CIDN:**

1008 0501006

#### **INVESTIGATION OF ISSUES FOR THE EVALUATION OF THE NEXT STEP PROGRAM**

##### **Objective:**

To develop a description of the Next Step Program and the projects funded under the 1991-1995 Next Step Program.

##### **CMHC Project Officer:**

P. Streich

##### **Division:**

Program Evaluation Division

##### **Contractor:**

SPR Associates Inc.  
2 Carleton Street  
Suite 804  
Toronto, Ontario  
M5B 1J3

##### **CIDN:**

1008 0501008

#### **INVESTIGATION OF ISSUES FOR THE EVALUATION OF THE NEXT STEP PROGRAM**

##### **Objective:**

To investigate the concept of second-stage housing from an operational perspective, and discuss the essential attributes of this type of housing which could be addressed in the evaluation of CMHC's Next Step Program.

##### **CMHC Project Officer:**

P. Streich

##### **Division:**

Program Evaluation Division

##### **Contractor:**

Susan Nelson  
NHL Consulting Group  
P.O. Box 465  
Lantzville, British Columbia  
V0R 2H0

##### **CIDN:**

1008 0501007

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# RECHERCHE EN LOGEMENT

Volume 2  
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## INTRODUCTION/INTRODUCTION

Under Part IX of the National Housing Act the Government of Canada provides funds to Canada Mortgage and Housing Corporation to conduct research into the social, economic and technical aspects of housing and related fields.

*Housing Research Quarterly* is compiled and produced on a quarterly basis by the Canadian Housing Information Centre. This publication provides information and access to research which is undertaken and sponsored by the Corporation.

The publication contains information on completed research reports, new publications, videos and bibliographies, as well as ongoing research projects. An alphabetical title index of items listed is included at the end for quick reference.

"Ongoing Projects" refer to research projects which are currently underway. No reports are yet available. Once the project is completed, and a report is available for distribution, it will be listed in *Housing Research Quarterly* under the "Completed Reports" area with a full bibliographic citation and abstract. The "Ongoing Projects" sections of *Housing Research Quarterly* contain the following information:

**Title:**  
Title of the project, which may not necessarily be the same as the final report.

**Objective:**  
Gives a brief description of the project.

**CMHC Project Officer:**  
Individual within CMHC who is managing the project.

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Division within CMHC which is managing the project.

**Contractor:**  
Individual or firm undertaking the research.

**CIDN:**  
Contract Identification Number.

En vertu de la Partie IX de la loi nationale sur l'habitation le gouvernement du Canada fournit des fonds à la Société canadienne d'hypothèques et de logement pour la recherche sur les aspects sociaux, économiques et techniques du logement et des domaines connexes.

*Recherche en logement-rapport trimestriel* est produit chaque trimestre par le Centre canadien de documentation sur l'habitation. Il contient des renseignements sur la recherche entreprise et subventionnée par la Société.

La publication présente des renseignements sur les rapports de recherche, les nouvelles publications, les vidéos et les bibliographies, ainsi que sur les projets de recherche en cours. Une liste alphabétique par titres, facile à consulter, se trouve à la fin de l'ouvrage.

Tous les projets non terminés, n'ayant pas encore fait l'objet d'un rapport sont des «projets en cours». Une fois qu'il sera terminé, publié et disponible, le rapport figurera dans la publication *Recherche en logement-rapport trimestriel* sous la rubrique «Rapports terminés» avec références bibliographiques et sommaire. Les sections «Projets en cours» de *Recherche en logement-rapport trimestriel* contiennent les renseignements suivants :

**Titre :**  
Titre du projet, qui n'est pas nécessairement le même que celui du rapport final.

**Objet :**  
Brève description du projet.

**Agent de projet pour la SCHL :**  
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**Division :**  
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Personne ou firme chargée de la recherche.

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#### **QUALIFICATION DU DEGRÉ DE CONFORT ACOUSTIQUE PROCURÉ PAR LES IMMEUBLES MULTILOGEMENTS**

##### **Objet :**

L'objectif de la recherche est de doter l'industrie de la construction d'un outil fiable d'évaluation du degré de confort acoustique d'un logement. Ceci peut-être accompli en regroupant les connaissances acquises lors de projets de recherche précédents sous forme d'objectifs d'isolation sonore et en élaborant un protocole d'évaluation préliminaire.

##### **Agent de projet pour la SCHL :**

M. Desbiens

##### **Division :**

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Programme de subventions de  
recherche

##### **Contractant :**

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##### **NIC :**

1461 0200001

## ATTICS/GRENIERS

### Ongoing Projects/Projets en cours

#### DEMONSTRATION OF IMPROVED ATTIC VENTILATION AND MOISTURE CONTROL STRATEGIES

##### Objective:

Test unconventional attic ventilation strategies in both new and existing houses. Use the existing attic computer program to help select which venting strategy will work best.

##### CMHC Project Officer:

D. Fugler

##### Division:

Research Division

##### Contractor:

Sheltair Scientific Ltd.  
#2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 2P1

##### CIDN:

1377 0200001

1377 0800001

# BUILDING LAW/ RÉGLEMENTATION DE LA CONSTRUCTION

## Completed Reports/Rapports terminés

### **A MEETING OF FEDERAL/PROVINCIAL/TERRITORIAL/INDUSTRY STAKEHOLDERS ON BUILDING CODE ISSUES RELATED TO HOUSING: FINAL REPORT.**

*Prepared by Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

A meeting was held in Ottawa on December 7 and 8, 1994, to discuss building code issues as they relate to housing. Federal/provincial/territorial ministries of housing, ministries responsible for building regulations, industry representatives and other government stakeholders active in the building code process were invited to attend. This report explains the code revision process, highlights the discussions held at the meeting and outlines recommendations for action.

Participants in the code revision process identified the following five broad areas of concern in their discussions:

1. There is strong support for a harmonized building code across Canada, although provinces/territories indicate a need for flexibility to respond to unique circumstances in their jurisdictions.
2. The development of a "core" code of minimum requirements supplemented by separate modules is supported in principle. This core document should address essential issues of health, safety and structural sufficiency.
3. The development of performance-based codes, rather than the current prescriptive codes, would allow flexibility in the National Building Code.
4. There is a fundamental need to undertake cost-benefit analyses of proposed code changes that have broad implications.
5. The enforcement of building codes is recognized as being as important as the development of the codes.

NOTE : Aussi disponible en français sous le titre : *Rencontre des intervenants des administrations fédérales, provinciales et territoriales et de l'industrie sur les dossiers d'actualité liés au code du bâtiment touchant l'habitation : rapport final.*

### **RENCONTRE DES INTERVENANTS DES ADMINISTRATIONS FÉDÉRALES, PROVINCIALES ET TERRITORIALES ET DE L'INDUSTRIE SUR LES DOSSIERS D'ACTUALITÉ LIÉS AU CODE DU BÂTIMENT TOUCHANT L'HABITATION : RAPPORT FINAL.**

*Préparé par la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1995.*

Une réunion s'est tenue à Ottawa les 7 et 8 décembre 1994 pour discuter des questions liées au code du bâtiment touchant l'habitation. Les ministères fédéraux, provinciaux et territoriaux du logement ainsi que les ministères chargés de la réglementation de la construction, des représentants de l'industrie et d'autres intervenants gouvernementaux qui oeuvraient activement dans le processus du code du bâtiment ont été invités à la réunion. Ce rapport explique le processus de révision du code, donne les points saillants des délibérations de la réunion et passe brièvement en revue les mesures recommandées.

Les participants au processus de révision du code ont dégagé les cinq grandes questions d'intérêt suivantes de leurs délibérations :



## BUILDING LAW/ RÉGLEMENTATION DE LA CONSTRUCTION

1. L'harmonisation du code du bâtiment dans tout le Canada bénéficie d'un fort appui, bien que les provinces et territoires réclament une certaine latitude pour tenir compte des circonstances particulières à leur territoire.
2. L'élaboration d'un code de base énonçant les exigences fondamentales, complété de modules distincts portant sur d'autres sujets reçoit un appui de principe. Ce document de base devrait s'en tenir aux questions essentielles de salubrité, de sécurité et de résistance structurale.
3. Des codes axés sur la performance au lieu des codes prescriptifs actuels serait un moyen d'assouplir le Code national du bâtiment (CNB).
4. Il est essentiel d'entreprendre des analyses des coûts et des avantages des projets de modification du code qui auraient de vastes conséquences.
5. L'application des codes du bâtiment est aussi importante que leur élaboration.

NOTE: Also available in English under the title: *A Meeting of Federal/Provincial/Territorial/Industry Stakeholders on Building Code Issues Related to Housing: Final Report.*

### Ongoing Projects/Projets en cours

#### A COMPARISON OF CANADIAN AND GERMAN BUILDING CODES AND STANDARDS

**Objective:**

To provide assistance in the development of a comparison of Canadian and German building codes and standards as applied to up to 3 storey residential wood platform frame construction.

**CMHC Project Officer:**

C. McCallum

**Division:**

International Relations  
Division

**Contractor:**

Dieter Schulz  
Achertalstrasse 13  
77866 Rheinau

**CIDN:**

1492 0900001

#### IMPACT OF THE REQUIREMENTS CONTAINED IN THE 1995 NATIONAL ENERGY CODE

**Objective:**

To manage studies which analyze the impact of the requirements contained in the 1995 National Energy Code.

**CMHC Project Officer:**

W. Webster

**Division:**

Research Division

**Contractor:**

Ontario Hydro  
Building Performance  
700 University Avenue  
Toronto, Ontario  
M5G 1X6

**CIDN:**

1387 0200002

#### REPORT ON IMPEDIMENTS AND POTENTIAL SOLUTIONS TO ISSUES BETWEEN THE CANADIAN AND GERMAN BUILDING CODES AND STANDARDS

**Objective:**

A report outlining comparative differences, impediments and potential solutions to issues between the Canadian and German building codes and standards, and especially as they relate to fire, safety and structural issues, covering up to 3 storey wood platform frame construction.

**CMHC Project Officer:**

C. McCallum

**Division:**

International Relations  
Division

**Contractor:**

Otto Bryden Erskine Martel  
Architects Incorporated  
30 Rosemount Avenue  
Suite 200  
Ottawa, Ontario  
K1Y 1P4

**CIDN:**

1492 0900002

### BUILD GREEN AND CONVENTIONAL MATERIALS OFF-GASSING TESTS.

*Prepared by Peter Piersol, Ortech. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

Initiatives to reduce waste from the construction industry have resulted in innovative products which have a recycled material content. The Build Green Program is an initiative to encourage the use of recycled materials. The program aims at promoting the use of recycled content building materials in the construction and renovation of buildings, increasing awareness of Build Green products and facilitating and initiating the development of new products made from waste materials. This effort is aimed at diverting construction, demolition and municipal wastes from landfill.

This study involved emission tests of thirty-seven materials, both Build Green and conventional materials. Materials tested included carpet, carpet undercushion, structural lumber, foundation material, insulation, drywall/fiberboard, counter tops and cabinetry.

The off-gassing tests determined that:

1. The Build Green products evaluated emitted equivalent quantities of Volatile Organic Compounds (VOCs) and formaldehyde as compared to conventional products.
2. Emissions from building materials can originate from the building material, from the material finish, from chemicals applied during construction and from chemicals adsorbed from other sources, e.g. during storage.
3. Chlorinated hydrocarbons were not emitted from these building materials.

### Ongoing Projects/Projets en cours

#### BIocreTE

##### Objective:

To develop and test a type of building material and system known as biocrete/biobloc, composed of biomass waste materials and soil cements which may be used together to produce a low cost continuous building envelope.

##### CMHC Project Officer:

M. Macpherson

##### Division:

Research Division

##### Contractor:

2949903 Canada Inc.  
118 Valley Drive  
Wakefield (Quebec)  
J0X 3G0

##### CIDN:

1444 0200001

#### PLANCHERS FLOTTANTS RÉSIDENTIELS

##### Objet :

Étudier l'influence du fractionnement et du facteur de forme sur le comportement des matériaux anti-vibratoires destinés aux planchers flottants durs.

##### Agent de projet pour la SCHL :

M. Macpherson

##### Division :

Division de la recherche

##### Contractant :

Acoustec Inc.  
Suite 103  
925, rue Newton  
Québec (Québec)  
G1P 4M2

##### NIC :

1442 0200001

## BUILDING MATERIALS/MATÉRIAUX DE CONSTRUCTION

### Ongoing Projects/Projets en cours

#### **"T" OR "L" SHAPE METAL CORNERS**

##### **Objective:**

Develop and test the performance of formed sheet metal corners and studs which replace corner and intersecting 2X4 wood wall studs used solely to attach inner finish panels in housing.

##### **CMHC Project Officer:**

M. Macpherson

##### **Division:**

Research Division  
Housing Technology  
Incentives Program

##### **Contractor:**

Drago Blazevic  
R.R. 1, Site 8, Box 28  
49 Overbrook Drive  
Waverley, Nova Scotia  
B0N 2S0

##### **CIDN:**

1498 0200001

#### **ÉTUDE SUR LES GRADIENTS DE PRESSION MOYENNE, LES PRESSIONS MOYENNES DES CAVITÉS ET LES PRESSIONS MOYENNES RÉSIDUELLES EXERCÉES SUR LES ÉCRANS PARE-PLUIE D'UN BÂTIMENT REPRÉSENTATIF.**

*Préparé par P.F. Skerlj et D. Surry. Préparé pour la Division de l'innovation dans l'habitation, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994.*

Des essais ont été effectués dans la soufflerie à couche limite de l'University of Western Ontario afin d'examiner les gradients de pression moyenne s'exerçant sur la face externe d'un bâtiment représentatif, et d'étudier les pressions nettes auxquelles est soumis l'écran pare-pluie. Un module comprenant un nombre variable de compartiments ventilés a servi pour déterminer la répartition des pressions moyennes externes, les pressions moyennes des cavités et les pressions moyennes consécutives s'exerçant à six endroits de la face longitudinale extérieure d'un modèle de bâtiment rectangulaire. À chaque endroit, l'angle du vent s'exerçant normalement ou parallèlement à la face longitudinale du bâtiment a été étudié. La majorité des essais ont été effectués en fonction d'une largeur de compartiment (dimension parallèle à l'ensemble des prises de pression extérieure) de 2 m grandeur nature. Un nombre limité d'essais ont aussi été effectués sur des compartiments de 1 m, 2 m, 4 m et 8 m de largeur.

Les résultats de pression externe indiquent d'abrupts gradients de pression moyenne horizontale et verticale à proximité des bords latéraux et supérieurs respectivement. Pour une pression dynamique type de 300 Pa (vitesse moyenne horaire 78 km/h) survenant tous les dix ans, des gradients de pression atteignant jusqu'à 260 Pa/m ont été mesurés près de l'angle supérieur. Les gradients mesurés aux régions inférieures de la face du bâtiment étaient généralement plus faibles. La mesure des pressions moyennes des cavités internes montre que la pression des compartiments ne s'équilibre pas lorsqu'ils sont exposés à des gradients externes importants. En pareil cas, il en résulte des différences appréciables de pression moyenne résiduelle sur l'écran pare-pluie. Comme on pouvait s'y attendre, on a constaté que les pressions nettes moyennes exercées sur l'écran pare-pluie diminuaient à mesure que diminuait la taille du compartiment et le gradient de pression moyenne. Il s'ensuit que les régions situées près des bords, où les gradients de pression externes sont généralement élevés, requièrent souvent une compartimentation pour réduire les pressions résiduelles.

NOTE: Also available in English under the title: *A Study of Mean Pressure Gradients, Mean Cavity Pressures, and Resulting Residual Mean Pressures Across a Rainscreen for a Representative Building.*

#### **IDEAS CHALLENGE: EXTERIOR WALL MONITORING PROTOCOL.**

*Prepared by Rick Quirouette, Quirouette Building Specialists Ltd. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

The technical quality of any exterior cladding and wall system can be related essentially to the performance of four design attributes. These are air leakage control, vapour diffusion control, rain penetration control and the level of thermal resistance. The purpose of this study was to develop a monitoring protocol and method of information analysis for monitoring the performance of the exterior walls of the IDEAS Challenge building projects.

The protocol proposes a method for documenting the innovations, for instrumenting the exterior walls, for recording the data to be collected, proposes a schedule of monitoring and data presentation and provides estimated costs. The protocol was developed for the five projects of the IDEAS Challenge Competition



## CLADDING/PAREMENT

but, for illustrative purposes, was detailed for one of the projects, Le Clos Saint-André, a 7-storey, medium-rise residential project in Montreal.

While the protocol was developed primarily for the CMHC IDEAS Challenge building projects, it is believed that the methodology could be applied to most building envelope performance monitoring projects. The actual sensor locations would require adjustments for the particular project wall under consideration, but the data monitoring methodology and information analysis should be applicable.

### PERFORMANCE MONITORING OF A BRICK VENEER/STEEL STUD WALL SYSTEM: PHASE 2 RESULTS.

*Prepared by Steven P. Laviolette and H. Keller, Keller Engineering Associates Inc.  
Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

As part of the CMHC evaluation program, Keller Engineering Associates Inc. carried out in situ performance monitoring of a brick veneer/steel stud (BV/SS) wall system. The performance of a test wall was monitored using various temperature, moisture and air pressure sensors that were connected to an automatic data logging system. In addition, inspection openings were made in the test wall after the monitoring work was completed in order to verify the results of the data analysis. This report outlines the findings of the second year of performance monitoring.

The results of Phase 2 are similar to those found in the first year of the study. Although the BV/SS wall system meets current construction standards, the wall is not performing in a satisfactory manner. Moisture trapped within the cavity and in the brick veneer may lead to serious distress problems over the long term. Thermal bridging at the studs also reduces the performance of the wall. These observed performance problems are mainly due to an ineffective air/vapour barrier system, inadequate cavity venting and a lack of exterior insulation. These results underscore the need for improved design and construction standards for BV/SS wall systems.

## Ongoing Projects/Projets en cours

### EIFS RAINSCREEN PRODUCT SYSTEM

#### Objective:

Develop new methods of installing exterior insulation and finish systems (EIFS). The new product system will encompass interconnected aspects of the wall portion of the building envelope.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
Housing Technology  
Incentives Program

#### Contractor:

STO Enterprises Inc.  
3495 Laird Road  
Units 16-18  
Mississauga, Ontario  
L5L 5S5

#### CIDN:

1268 0200001  
1268 0201001

### FIELD TEST OF IMPROVED WALLS

#### Objective:

To carry out monitoring on a high-rise residential building in Ottawa to assess performance of the brick veneer/steel stud envelope.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Housing Innovation Division

#### Contractor:

Keller Engineering Associates Inc.  
1390 Prince of Wales Drive  
Ottawa, Ontario  
K2C 3N6

#### CIDN:

0411 0301001  
0411 0302001  
0411 0303001

# **PREPARATION OF BEST PRACTICE GUIDE FOR FLASHING DETAILS, MASONRY VENEER/ CONCRETE BLOCK CONSTRUCTION AND WOODFRAME CONSTRUCTION**

## **Objective:**

To prepare three guides on building envelope design: 1) a 'best practice' guide for concrete block exterior wall construction; 2) a 'best practice' guide for various exterior wall assemblies with wood frame construction; 3) a 'best practice' guide for the flashing of wood, concrete and steel frame building envelopes. The documents will contain details, specifications, sequence of construction and information on inspection and commissioning.

## **CMHC Project Officer:**

S. Marshall

## **Division:**

Housing Innovation Division

## **Contractor:**

Robert Halsall & Associates/  
Otto & Bryden Arch.  
210 Gladstone Avenue  
Ottawa, Ontario  
K2P 0Y6

## **CIDN:**

0974 0300001

# **RAIN CONTROL AND WIND DRIVEN RAIN**

## **Objective:**

To carry out work aimed at producing guidelines for the testing and commissioning of pressure equalized rainscreen walls.

## **CMHC Project Officers:**

J. Rousseau; P.-M. Busque

## **Division:**

Housing Innovation Division

## **Contractor:**

Quirouette Building Envelope  
Specialists  
18 Crispin Private  
Ottawa, Ontario  
K1K 2T8

## **CIDN:**

1123 0304002  
1123 0300004

# **TESTING OF REINFORCED OR PRE-STRESSED BRICK VENEER WALL SYSTEMS USING A BRICK VENEER WALL SYSTEM**

## **Objective:**

To demonstrate the feasibility and potential for reinforced or pre-stressed brick veneer wall systems, and to identify further research and development needs including laboratory investigations, design details, and construction guidelines.

## **CMHC Project Officer:**

M. Macpherson

## **Division:**

Research Division  
Housing Technology  
Incentives Program

## **Contractor:**

Canada Brick  
2121 Britannia Road West  
Box 668  
Streetsville, Ontario  
L5M 2C3

## **CIDN:**

1177 0200001

# **ZERO-CAVITY, PRESSURE EQUALIZED RAINSCREEN WALL SYSTEM**

## **Objective:**

To investigate the performance of the zero-cavity, pressure equalized rainscreen wall system. To investigate the consequences of completely filling the air space behind brick cladding with a fibrous, draining insulation to answer the following questions: can masons build this wall, will the insulation drain, will the cavity pressure equalize, will the brick become too warm or too cold, and will the water reach the sheathing by capillary action?

## **CMHC Project Officer:**

J. Rousseau

## **Division:**

Housing Innovation Division

## **Contractor:**

University of Waterloo  
Building Engineering Group  
Civil Engineering Department  
Waterloo, Ontario  
N2L 3G1

## **CIDN:**

0689 0300001

## Ongoing Projects/Projets en cours

### **DOCUMENTATION OF THE CONDITIONS IN THE RIVERSDALE NEIGHBOURHOOD IN SASKATOON**

#### **Objective:**

To document the conditions in the Riversdale neighbourhood in Saskatoon which led to the development of a volunteer inspection service, and develop a volunteer training handbook for use in other municipalities, along with a promotional plan for the handbook.

#### **CMHC Project Officer:**

P. Archer

#### **Division:**

Housing Innovation Division

#### **Contractor:**

University of Manitoba  
Department of Family Studies  
Winnipeg, Manitoba  
R3T 2N2

#### **CIDN:**

1379 0300001



### ANTI-CARBONATION COATINGS FOR USE ON CANADIAN BUILDINGS.

*Prepared by Robert Halsall and Associates Limited. Principal consultant: Peter Halsall. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1992, i.e., 1995.*

Coatings and sealers have been found to slow or prevent the progress of carbonation in European laboratory tests. The purpose of this research was to evaluate the performance of "anti-carbonation" coatings when subjected to the Canadian climate. The products to be tested were applied to cast-in-place shear walls on a 20-year-old building with a significant depth of carbonation. Phenolphthalein testing was used to measure the carbon depth.

Phenolphthalein testing indicates an average depth of carbonation of approximately 15mm. The readings were very uniform over the test areas, with a standard deviation of only 1.6mm. The projected change in carbonation depth over the next ten years is 4mm. Based upon the projected rate of carbonation during the test period, it is recommended that further testing for carbonation should be deferred until 4 and 10 year intervals. The uniformity in the existing depth of carbonation in these shear walls will facilitate comparison of the performance of the various coatings.

NOTE : Aussi disponible en français sous le titre : *Revêtements anti-carbonatation pour les bâtiments canadiens.*

### LA CARBONATATION DU BÉTON DANS LES BÂTIMENTS CANADIENS.

*Rédigé par Robert Halsall and Associates Limited. Rédigé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1993, c.-à-d., 1995.*

Les auteurs de ce rapport ont évalué la profondeur de la carbonatation du béton dans des bâtiments canadiens de même que les répercussions que cette carbonatation aura sur le parc de bâtiments du pays. Les auteurs concluent que, pour l'instant, même si la carbonatation du béton est active à certains endroits, elle n'entraîne pas une corrosion généralisée des structures de béton armé au Canada. Avec le temps, il se produira de la corrosion à certains endroits à cause de la carbonatation, et le problème ne pourra qu'aller en s'aggravant. L'épaisseur et la qualité de l'enrobage sont les plus importants facteurs de protection de l'acier d'armature contre la détérioration causée par la carbonatation. Le béton protégé des chutes de pluie directes, mais exposé à un taux d'humidité relativement élevé ou à des gaz d'échappement (comme dans le cas de certaines structures de stationnement, de chaufferies et d'installations industrielles), peut être particulièrement sujet à de la corrosion provoquée par la carbonatation. Les données recueillies dans le cadre de cette étude indiquent qu'il n'existe pas de méthode simple (fondée p. ex. sur l'âge, la situation géographique, l'aspect visuel) de prévoir la prédisposition d'une structure particulière à la carbonatation.

NOTE: Also available in English under the title: *Concrete Carbonation in Canadian Buildings.*

### CONCRETE CARBONATION IN CANADIAN BUILDINGS.

*Prepared by Robert Halsall and Associates Limited. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1993, i.e., 1995.*



## CONCRETE/BÉTON

This report estimates the extent of concrete carbonation in Canadian buildings as well as the impact that carbonation will have on the existing building stock in this country. The report concludes that carbonation of concrete, although locally active, is not presently causing widespread corrosion in reinforced concrete structures in Canada. Corrosion will exist in particular locations as a result of carbonation and will be an increasing problem over time. The depth and quality of concrete cover are the most important factors in protecting reinforcing steel from carbonation-related deterioration. Concrete sheltered from direct rainfall, but exposed to relatively high humidity and/or combustion exhaust (such as in some parking structures, boiler rooms and industrial facilities), may be particularly susceptible to carbonation-induced corrosion. The survey data also indicates that there is no simple method (e.g., on the basis of age, geographical location, visual appearance, etc.) of predicting the susceptibility of individual structures to carbonation.

NOTE : Aussi disponible en français sous le titre : *La Carbonatation du béton dans les bâtiments canadiens.*

### REVÊTEMENTS ANTI-CARBONATATION POUR LES BÂTIMENTS CANADIENS.

*Rédigé par Robert Halsall and Associates Limited. Consultant principal : Peter Halsall. Rédigé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1992, c.-à-d., 1995.*

Les revêtements et les bouche-pores se sont avérés aptes à ralentir ou à prévenir la progression de la carbonatation lors d'essais en laboratoire européens. Le but de cette recherche était d'évaluer la performance des revêtements anti-carbonatation dans le climat canadien. Les produits mis à l'essai ont été appliqués sur des murs de contreventement en béton coulé sur place dans un immeuble âgé de 20 ans présentant une importante pénétration de carbonatation. L'analyse à la phénolphthaléine a été utilisée pour établir le degré de pénétration de la carbonatation.

L'essai à la phénolphthaléine a indiqué une profondeur moyenne de carbonatation d'environ 15mm. Les lectures étaient très uniformes d'une zone d'essai à l'autre puisque l'écart standard n'a été que de 1,6 mm. On estime que la pénétration de la carbonatation devrait avancer de 4 mm au cours des dix prochaines années. Compte tenu du rythme prévu de carbonatation déterminé durant la période d'essai, nous recommandons de n'effectuer les prochains essais de carbonatation que dans 4 et 10 ans. L'uniformité de la pénétration de la carbonatation dans ces murs de contreventement facilitera la comparaison de la performance des divers revêtements.

NOTE: Also available in English under the title: *Anti-Carbonation Coatings for Use on Canadian Buildings.*

**DEVELOPMENT OF A NEW  
EDITION OF THE STANDARD  
FOR CONCRETE  
CONSTRUCTION FOR  
HOUSING AND SMALL  
BUILDINGS (CSA A438)**

**Objective:**

To carry out the development of a new edition of the standard for concrete construction for housing and small buildings (CSA A438).

**CMHC Project Officer:**

A. Houston

**Division:**

Research Division

**Contractor:**

Canadian Standards  
Association  
178 Rexdale Boulevard  
Toronto, Ontario  
M9W 1R3

**CIDN:**

1259 0200001

**DURABILITY OF  
FIBRE-REINFORCED  
PLASTIC (FRP) REBARS IN  
CONCRETE STRUCTURES**

**Objective:**

Scientific research and development concerning the durability of fibre-reinforced plastic (FRP) rebars in concrete structures.

**CMHC Project Officer:**

A. Houston

**Division:**

Research Division

**Contractor:**

National Research Council  
1200 Montreal Road  
Ottawa, Ontario  
K1A 0R6

**CIDN:**

1172 0200001

### FIELD TESTS OF REMEDIAL MEASURES FOR HOUSES AFFECTED BY HAZARDOUS LANDS.

*Prepared by CH2M Hill Engineering Ltd. and Sheltair Scientific Ltd. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

Remedial measures to prove soil gas infiltration have been implemented on many buildings affected by the intrusion of radon, water vapour, methane and other volatile organic compounds (VOCs). The success of these measures has been well documented for gases such as radon; however, similar detailed documentation was not readily available for methane or other VOCs. The objective of this study was to evaluate the effectiveness of four different remedial solutions installed on houses. Nine houses were tested, all of which had the potential for methane intrusion.

The four different remedial measures which were evaluated included: a liner with a subslab passive vent system; an active venting fan connected to a foundation perimeter gas collection pipe; a passive vent connected to a foundation perimeter gas collection pipe; and a liner system only. Each of these four systems was installed in four separate communities across Canada. Based on long-term monitoring, none of the nine houses tested was identified as having significant methane concentrations indoors due to soil gas entry. Although the installed remedial measures may have had an effect on the limited amount of methane detected indoors, other factors such as low methane generation rates, and diffusion controlled sources also had a significant influence. In fact, at some houses, the control systems were likely not necessary because of these factors.

Further short-term tracer tests were carried out on one of the systems to evaluate the integrity of the remedial measure. Based on a limited number of houses tested, the results suggested that the amount of gas could be limited by as much as four orders of magnitude.

# COOPERATIVE AND NON-PROFIT HOUSING/ LOGEMENT SANS BUT LUCRATIF ET COOPÉRATIVES

## Ongoing Projects/Projets en cours

### CONSERVATION DU PATRIMOINE IMMOBILIER COOPÉRATIF

#### Objet :

La recherche a pour thème la conservation du patrimoine immobilier coopératif par l'optimisation des activités d'entretien et de réparations prises en charge par les membres.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Monsieur André Poulin  
École des hautes études  
commerciales  
640 - 333, chemin de la  
Reine-Marie  
Montréal (Québec)  
H3V 1A2

#### NIC :

1281 0200001

### PERTINENCE ET FAISABILITÉ DE LA FORMULE COOPÉRATIVE D'HABITATION - ÉQUITÉ

#### Objet :

Le projet de recherche porte sur la conception et la mise en oeuvre d'un programme d'auto-développement pour le secteur coopératif en habitation.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Madame Marie J. Bouchard  
Centre de gestion des  
coopératives  
École des hautes études  
commerciales  
333, chemin de la  
Reine-Marie, local 640  
Montréal (Québec)  
H3V 1A2

#### NIC :

1084 0200001

### POUR UNE MISE EN MARCHÉ EFFICIENTE DES COOPÉRATIVES D'HABITATION AVEC INVESTISSEMENT DES MEMBRES

#### Objet :

Évaluer le(s) produit(s)  
d'habitation coopérative dans  
une perspective marketing,  
mais aussi, élaborer une  
méthodologie de lancement de  
ces nouveaux concepts.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Monsieur Guy Ara  
Faculté d'administration  
Université de Sherbrooke  
Sherbrooke (Québec)  
J1K 2R1

#### NIC :

0907 0200001

### TRAINING & NON-PROFIT HOUSING ASSOCIATIONS

#### Objective:

Contribution to create a  
self-sustaining program to  
establish a consistent and  
coherent approach to  
education and training for  
staff and volunteer board  
members of non-profit  
housing associations across  
Canada.

#### CMHC Project Officer:

B. Lortie

#### Division:

Programs Sector

#### Contractor:

Canadian Housing and  
Renewal Association  
251 Laurier Avenue West  
Suite 401  
Ottawa, Ontario  
K1A 0P7

#### CIDN:

1467 1501001  
1467 1500001



## Completed Reports/Rapports terminés

### FOCUS GROUPS TO EXAMINE BARRIER-FREE AND ADAPTABLE HOUSING DESIGN.

*Prepared by Hickling Corporation, RBO Architecture, and Société Logique. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

Seventeen focus group meetings were held across Canada to solicit consumer input on accessible and adaptable housing features. The focus groups involved seniors, older adults and people with disabilities. Participants identified basic and custom features which affect their decisions to purchase or rent homes. The scope of the project addressed private dwelling spaces as well as public and exterior spaces.

The accessible and adaptable features which are most important to participants are described and reported. Participant feedback reinforces, and sometimes challenges, opinions held by accessible housing designers. Features that have the most widespread support include those which contribute to wheelchair access, safety, ease of use, or future adaptability. Most participants recognize that improved wheelchair accessibility can benefit everyone at various stages of their lives, especially in bathrooms, kitchens, bedrooms and entrances. Accommodations for people with sensory impairments are considered in many safety, adaptable and daily-use features.

NOTE : Aussi disponible en français sous le titre : *Groupes de discussion sur la conception de logements accessibles et adaptables.*

### GROUPES DE DISCUSSION SUR LA CONCEPTION DE LOGEMENTS ACCESSIBLES ET ADAPTABLES.

*Préparé par Hickling Corporation, RBO Architecture et Société Logique. Préparé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994.*

Dix-sept réunions de groupes de discussion ont eu lieu dans l'ensemble du pays afin d'obtenir l'avis des consommateurs sur les caractéristiques d'un logement accessible et adaptable. Les groupes comptaient des personnes âgées, d'âge mûr et des personnes handicapées. Les participants ont relevé les caractéristiques communes et particulières qui influencent leur décision d'acheter ou de louer un logement. L'étude portait sur les aires privées des logements ainsi que sur les aires publiques et extérieures.

Ce document décrit les caractéristiques d'accessibilité et d'adaptation les plus importantes pour les participants. Les commentaires des participants appuient, et parfois contredisent, l'opinion répandue chez les concepteurs de logements accessibles. Les caractéristiques les plus généralement préconisées étaient celles qui facilitaient l'accès des fauteuils roulants, la sécurité, l'emploi ou l'adaptation future. La plupart des participants reconnaissent que la facilité d'accès pour les fauteuils roulants peut profiter à tous à différentes étapes de la vie, surtout dans la salle de bains, la cuisine, la chambre à coucher et l'entrée. Nombre de caractéristiques concernant la sécurité, l'adaptation et l'usage quotidien tiennent compte des besoins des personnes atteintes d'un handicap sensoriel.

NOTE: Also available in English under the title: *Focus Groups to Examine Barrier-Free and Adaptable Housing Design.*

## AN EXPLORATION OF DESIRABILITY OF HOUSING LOCATION BY CONSUMERS OF PSYCHIATRIC SERVICES

### Objective:

To conduct a focus group comprised of tenants from three types of housing, to conduct 60 semi-structured interviews with tenants in the three aforementioned housing settings.

### CMHC Project Officer:

M. Macpherson

### Division:

Research Division  
External Research Program

### Contractor:

Ms. Katherine M. Boydell  
Queen Street Mental Health Centre  
1001 Queen Street West  
Toronto, Ontario  
M6J 1H4

### CIDN:

1272 0200001

## FEASIBILITY OF DISABILITY-INTEGRATED, UNIVERSALLY DESIGNED INFILL CO-HOUSING IN AN URBAN SETTING

### Objective:

To create a document which includes: a model of typical infill co-housing based on current literature and post-occupancy evaluation of existing co-housing developments and their residents, etc.

### CMHC Project Officer:

M. Macpherson

### Division:

Research Division  
External Research Program

### Contractor:

Mr. David Wetherow  
Executive Director  
Association for Community Living  
1706 - 90 Garry Street  
Winnipeg, Manitoba  
R3C 4J4

### CIDN:

1101 0200001

## UN GUIDE ILLUSTRÉ DE CARACTÉRISTIQUES DE CONCEPTION FAVORISANT L'ACCESSIBILITÉ

### Objet :

De produire un guide illustré de caractéristiques de conception favorisant l'accessibilité, qui soient adaptables et efficaces par rapport aux coûts tout en pouvant être intégrées dans divers types d'habitations.

### Agent de projet pour la SCHL :

T. Parker

### Division :

Division de la recherche

### Contractant :

Société logique inc.  
3250, boulevard St-Joseph est  
Montréal (Québec)  
H1Y 3G2

### NIC :

1240 1100001

## HOUSING NEEDS OF PEOPLE WITH DISABILITIES

### Objective:

To provide a profile of the housing characteristics and needs of people with disabilities using data from the 1991 Census and post-censal Health and Activity Limitations Survey (HALS).

### CMHC Project Officer:

J. Angus

### Division:

Research Division

### Contractor:

ARK Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

### CIDN:

1045 0200003

## HOUSING PEOPLE WITH DISABILITIES

### Objective:

Updating of the NHA publications #5467 and 5468: Housing Disabled Persons.

### CMHC Project Officer:

T. Parker

### Division:

Research Division

### Contractor:

Associated Planning Consultants Inc.  
191 Eglinton Avenue East  
Suite 303  
Toronto, Ontario  
M4P 1K1

### CIDN:

1298 0200001

## PREPARATION OF TWO REFERENCE GUIDES ON TECHNOLOGY

### Objective:

To design and write the text for the two reference guides on technology.

### CMHC Project Officer:

T. Parker

### Division:

Research Division

### Contractor:

Roger Dube  
Consulting and Training Services  
825 Wilfrid Lavigne  
Aylmer (Québec)  
J9J 1Z2

### CIDN:

1261 1100001

## Completed Reports/Rapports terminés

### GUIDE DES SERVICES D'ENTRETIEN DE LA COUR ET DE LA MAISON À L'INTENTION DES PERSONNES ÂGÉES.

*Préparé par Sylvia Goldblatt Associates. Préparé pour la Division de la planification stratégique et de l'élaboration des propositions, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994, c.-à-d. 1995.*

Ce guide décrit les questions pratiques entourant la prestation de services d'entretien de la cour et de la maison à l'intention des personnes âgées. L'information contenue dans ce guide est tirée d'une enquête menée auprès de 38 organismes partout au Canada. Ces organismes ont été décrits par des personnes qui connaissent les services qu'ils offrent aux personnes âgées dans leur région. Le guide donne la description détaillée de douze organismes, qui ont été choisis parce qu'ils illustrent les différentes méthodes de prestation de services, sont bien établis, ont un dossier faisant preuve de leurs activités, et offrent des exemples d'organismes, petits et grands, fonctionnant dans les régions urbaines et rurales à travers tout le Canada. Le guide s'adresse aux groupes et organismes de toutes tailles qui sont intéressés à offrir des services d'entretien de la cour et de la maison aux personnes âgées de leur région.

NOTE: Also available in English under the title: *Seniors' Home and Yard Maintenance Services Guide.*

### SENIORS' HOME AND YARD MAINTENANCE SERVICES GUIDE.

*Prepared by Sylvia Goldblatt Associates. Prepared for Strategic Planning and Policy Development Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

This guide discusses practical issues related to the delivery of home and yard maintenance services to seniors. The information contained in the guide was obtained from a survey of 38 agencies across Canada. These agencies were identified by people who are familiar with the services offered to seniors in their area. Detailed case profiles of twelve agencies are provided in the guide. These agencies were selected because they represent the different approaches to service delivery, are well established with a proven track record, and provide examples of smaller and larger agencies operating across Canada in urban and rural areas. The guide is aimed at groups and organizations of all sizes that are interested in providing home and yard maintenance services to seniors in their area.

NOTE : Aussi disponible en français sous le titre : *Guide des services d'entretien de la cour et de la maison à l'intention des personnes âgées.*

## Ongoing Projects/Projets en cours

### ADAPTING MUNICIPAL HOUSING FOR DEMENTIA

#### Objective:

To contribute to an understanding of what housing providers can do to help residents with dementia age in place.

#### CMHC Project Officer:

L. Rodriguez

#### Division:

Research Division  
External Research Program

#### Contractor:

Myra Schiff  
213 - 110 Richmond Street East  
Toronto, Ontario  
M5C 2P9

#### CIDN:

1286 0200001



# **AGING IN PLACE: STRATEGIES TO MEET THE NEEDS OF SENIOR TENANTS IN NON-PROFIT HOUSING**

## **Objective:**

To produce the final manuscript for a publication that will be based on the results of a study that was recently carried out in the province of Nova Scotia: "Aging in Place: Strategies to Meet the Needs of Senior Tenants in Non-profit Housing".

## **CMHC Project Officer:**

L. Rodriguez

## **Division:**

Research Division

## **Contractor:**

Social Data Research Ltd.  
130 Slater Street  
Suite 750  
Ottawa, Ontario  
K1P 6E2

## **CIDN:**

1427 0200001

# **THE CHINESE ELDERLY: SOCIAL INTEGRATION IN METRO HOUSING**

## **Objective:**

A study to ask the ethnic elderly through interviews how they are dealing with their communication needs in an attempt to ascertain the level of congruence between the services being offered and the ethnic composition of the buildings under study.

## **CMHC Project Officer:**

M. Macpherson

## **Division:**

Research Division  
External Research Program

## **Contractor:**

Dr. Morris Saldov  
Ginto Consulting and Research  
2 Kensington Avenue  
Toronto, Ontario  
M5T 2J7

## **CIDN:**

1285 0200001

# **A GUIDE TO PLANNING, DESIGNING, DEVELOPING, MARKETING AND MANAGING HOUSING FOR OLDER CANADIANS**

## **Objective:**

To produce an easy to follow and practical guide document that will assist both non-profit groups and the private sector in planning, designing, developing, marketing and managing a wide range of housing choices for older Canadians.

## **CMHC Project Officer:**

L. Rodriguez

## **Division:**

Research Division

## **Contractor:**

Baycrest Centre for Geriatric Care  
3560 Bathurst Street  
North York, Ontario  
M6A 2E1

## **CIDN:**

0869 0200001

# **HELPING SENIORS AND PEOPLE WITH DISABILITIES MAINTAIN THEIR INDEPENDENCE AT HOME: A GUIDE TO DELIVERING HOME ADAPTATIONS**

## **Objective:**

To produce a how-to guide document which will identify and describe the steps and resources involved in planning, designing, implementing, managing and

marketing a variety of different approaches to delivering home adaptations for seniors and persons with disabilities.

## **CMHC Project Officer:**

L. Rodriguez

## **Division:**

Research Division

## **Contractor:**

University of Manitoba  
Administration Building  
Room 202  
Winnipeg, Manitoba  
R3T 2N2

## **CIDN:**

1256 0200001  
1256 1100001

# **HOUSING OPTIONS FOR CANADIANS WITH DEMENTIA**

## **Objective:**

To produce an easy to follow, illustrated and practical guide document on innovative housing options for people who suffer from dementia.

## **CMHC Project Officer:**

L. Rodriguez

## **Division:**

Research Division

## **Contractor:**

Communitas Consultants  
4550 Beverley Crescent  
Vancouver, British Columbia  
V6J 4E6

## **CIDN:**

1251 0200001



## Ongoing Projects/Projets en cours

### NEIGHBOURHOOD GROUP HOMES: THE PLANNING, DESIGN AND DEVELOPMENT PROCESS

#### Objective:

To produce a number of key recommendations, guidelines, and development strategies that will shorten the learning curve for the volunteers, bureaucrats and professionals who usually develop small group homes for seniors.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division

#### Contractor:

Ms. Clarke and Dr. Gutman  
Gerontology Research Centre  
Simon Fraser University  
2800 - 515 West Hastings  
Street  
Vancouver, British Columbia  
V6B 5K3

#### CIDN:

1453 0200001

### PRODUCE A COMPUTERIZED SET OF TOOLS THAT WILL ASSIST IN DEVELOPING PROFILES OF THE NEEDS AND PREFERENCES OF SENIORS IN RURAL AREAS

#### Objective:

To improve the current version of "Seniors", examine ways of streamlining the seniors survey questionnaire and the service providers survey questionnaire with a view to improving data collection and entry systems.

#### CMHC Project Officer:

L. Rodriguez

#### Division:

Research Division

#### Contractor:

Tetrad Computer  
Applications Ltd.  
1145 West Georgia Street  
Vancouver, British Columbia  
V6G 2T3

#### CIDN:

0528 0200002

### REGIONAL SENIORS RESEARCH ACTIVITY - ATLANTIC

#### Objective:

To raise awareness in the Fredericton area of the network to ensure that seniors fully utilize the service; to develop and implement a communication plan for the Seniors Renovation Advisory Network's Service.

#### CMHC Project Officer:

B. Gray

#### Division:

Atlantic Region

#### Contractor:

Bissett Matheson  
Communications  
31 William Street  
Fredericton, New Brunswick  
E3A 4V7

#### CIDN:

0883 1351001

### REGIONAL SENIORS RESEARCH ACTIVITY - ATLANTIC

#### Objective:

To test a model in which trades people retired from the construction field, or other interested volunteers, are trained to inform seniors on home adaptations and repairs.

#### CMHC Project Officer:

B. Gray

#### Division:

Regional Offices

#### Contractor:

New Brunswick Department  
of Municipalities, Culture and  
Housing  
P.O. Box 6000  
Fredericton, New Brunswick  
E3B 5H1

#### CIDN:

0883 1350003

### STUDY OF THE HOUSING AND SOCIAL NEEDS OF SENIORS IN THE NORTHWEST TERRITORIES

#### Objective:

To study and analyze the needs of aboriginal and non-aboriginal seniors living in the Northwest Territories in order to determine housing and support services requirements, with projections to the year 2005.

#### CMHC Project Officer:

B. Gray

#### Division:

Research Division

#### Contractor:

Treeline Planning Services Ltd  
14 Ptarmigan Road  
Yellowknife, Northwest  
Territories  
X1A 2W8

#### CIDN:

0883 1322001

### ASSESS THE INDOOR ENVIRONMENT AND ENERGY CONSUMPTION CHARACTERISTICS OF 8 MID-RISE RESIDENTIAL BUILDINGS

#### Objective:

To analyze energy and air quality in mid-rise residential buildings, through a survey of four mid-rise residential buildings in both Toronto and Vancouver.

#### CMHC Project Officer:

D. Hill

#### Division:

Research Division

#### Contractor:

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### CIDN:

1373 0200001  
1373 0800001

### COMMUNITY ENERGY SYSTEM PROJECT: ENERGY EVALUATION OF SENIORS HOUSING UNIT - WHITESANDS FIRST NATION

#### Objective:

To accurately determine the energy loads for a small cogeneration facility to serve a 10 unit seniors housing project at Whitesands First Nation near Armstrong, Ontario.

#### CMHC Project Officer:

C. Ives

#### Division:

Research Division  
Panel on Energy Research and Development

#### Contractor:

R. Donn Milligan  
1050633 Ontarion Inc.  
Kenora, Ontario  
P9N 3X7

#### CIDN:

1032 0800002

### ENERGY AUDITS OF TEN HIGH-RISE RESIDENTIAL BUILDINGS

#### Objective:

To determine the total energy gain and losses for 10 high-rise buildings across the country.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Housing Innovation Division

#### Contractor:

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

#### CIDN:

1291 0300001

### ENERGY PERFORMANCE CONTRACTING AND THE RESIDENTIAL SECTOR

#### Objective:

To explore the feasibility of applying energy performance contracting to the residential sector.

#### CMHC Project Officer:

D. D'Amour

#### Division:

Research Division

#### Contractor:

Marbek Resource Consultants Ltd.  
Suite 500  
1355 Bank Street  
Ottawa, Ontario  
K1H 8K7

#### CIDN:

1372 0200001

### ENVIRONMENTAL IMPACT STUDY FOR HOUSING ENERGY EFFICIENCY TECHNOLOGY IMPACTS

#### Objective:

To assess the energy efficiency of improved thermal envelope performance and the impact of the envelope changes on the general environment and on indoor air quality.

#### CMHC Project Officer:

T. Hamlin

#### Division:

Research Division  
Panel on Energy Research and Development

#### Contractor:

SAR Engineering Limited  
8884 - 15th Avenue  
Burnaby, British Columbia  
V3N 1Y3

#### CIDN:

0847 0200001  
0847 0201001

## Ongoing Projects/Projets en cours

### HEAT, AIR, AND MOISTURE TRANSFER IN HIGH-RISE BUILDING ENVELOPES

**Objective:**

To develop design guidelines for energy efficiency and durability of wall structures and roofing systems of residential high-rise buildings.

**CMHC Project Officer:**

D. Hill

**Division:**

Research Division

**Contractor:**

National Research Council  
Building M-20  
Montreal Road  
Ottawa, Ontario  
K1A 0R6

**CIDN:**

0719 0200001  
0719 0201001

### MONITORING OF THE ENERGY EFFICIENT APARTMENT BUILDINGS AND MECHANICAL SYSTEMS

**Objective:**

To carry out monitoring of the energy efficient apartment buildings and mechanical systems at 3015 and 3023 Parkerhill Road, Mississauga.

**CMHC Project Officer:**

W. Webster

**Division:**

Research Division  
Panel on Energy Research  
and Development

**Contractor:**

Tatry - Pathway Co-op  
Peel Non-profit Housing  
3015 Parkhill Road  
Mississauga, Ontario  
L5B 4B3

**CIDN:**

1260 0200001  
1260 0800001

### PRECALCULATION OF THERMAL PERFORMANCE VALUES FOR TABLES IN THE 1995 NATIONAL ENERGY CODE

**Objective:**

To precalculate thermal performance values of building assemblies for the National Energy Code for Buildings 1995 and the National Energy Code for Houses 1995.

**CMHC Project Officer:**

W. Webster

**Division:**

Research Division

**Contractor:**

Enermodal Engineering  
Limited  
368 Phillip Street  
Waterloo, Ontario  
N2L 5J1

**CIDN:**

1387 0200001

### UPGRADING OF OPTIMIZE

**Objective:**

Update Statistics Canada data; programme revision and upgrade; expansion of programme versatility; users guide; first level beta testing; second level beta testing of Optimize.

**CMHC Project Officer:**

P. Russell

**Division:**

Research Division

**Contractor:**

Sheltair Scientific Ltd.  
2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

**CIDN:**

0865 0201002

### WOOD FUELED DOMESTIC ENERGY CONVERSION SYSTEMS

**Objective:**

To carry out a study of wood fueled domestic energy conversion systems.

**CMHC Project Officer:**

P. Russell

**Division:**

Research Division

**Contractor:**

Allen Associates  
400 Mount Pleasant Road  
Suite 5  
Toronto, Ontario  
M4S 2L6

**CIDN:**

1423 0200001  
1423 0800001



### CHARACTERIZATION OF THE INDOOR ENVIRONMENT INDUSTRIES.

*Prepared by Cullbridge Marketing and Communications. Prepared for Industry Canada, Canada Mortgage and Housing Corporation and Ontario Ministry of Environment and Energy. Ottawa: CMHC, 1995.*

This study provides a "snap shot" of Canadian indoor environment industries and the business opportunities related to their rapid growth. Companies were categorized into five groupings: 1) inspection, monitoring and control equipment and systems; 2) ventilation, air filtration, air conditioning and related equipment and systems; 3) healthier lighting systems; 4) low-pollution building products, materials and technologies; and 5) related services. Self-administered questionnaires were sent to qualified companies. Interviews were conducted with some of these companies, as well as with related government organizations and industry associations. A variety of factors were found to be driving expansion in these industries, a number of which will ensure continued growth over the coming decade. Corresponding business opportunities were identified for Canadian companies in both domestic and foreign markets.

### COMBUSTION GASES IN YOUR HOME: THINGS YOU SHOULD KNOW ABOUT COMBUSTION SPILLAGE.

*About Your House Series; CE 2. Ottawa: Canada Mortgage and Housing Corporation, 1995.*

Because toxic elements can be present in combustion gases, sharing your home with these gases can lead to problems ranging from nuisance headaches to serious illness, carbon monoxide poisoning and even death. The most likely health effects are chronic, low-grade, sometimes difficult-to-define ailments, and health deterioration due to long-term exposure to the combustion gases. These effects can occur even if concentrations are low.

The number of houses with potentially significant combustion spillage is increasing, and on occasion the results can be extremely serious. This factsheet provides some important information about combustion spillage. It alerts you to some of the symptoms and outlines practical steps you can take to reduce the risks. In short, this factsheet is designed to help you keep combustion gases out of your home.

NOTE : Aussi disponible en français sous le titre : *Les Gaz de combustion dans votre maison : ce que vous devez savoir sur les émanations des gaz de combustion.*

### LES GAZ DE COMBUSTION DANS VOTRE MAISON : CE QUE VOUS DEVEZ SAVOIR SUR LES ÉMANATIONS DES GAZ DE COMBUSTION.

*Collection Votre maison; CF 2. Ottawa : Société canadienne d'hypothèques et de logement, 1995.*

Comme les gaz de combustion peuvent renfermer des substances toxiques, le fait d'en tolérer la présence peut entraîner de simples maux de tête ennuyeux, mais aussi une grave maladie, une intoxication au monoxyde de carbone ou même la mort. Les effets sur la santé les plus probables sont des troubles chroniques bénins parfois indéfinissables ainsi qu'une détérioration de la santé résultant d'une exposition prolongée aux gaz de combustion. Et ces effets peuvent se produire même à faible concentration.



## ENVIRONMENTAL POLLUTION AND CONTROL/ POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

Le nombre de maisons où le risque d'émanations des gaz est assez important augmente et les conséquences peuvent parfois être extrêmement graves. Ce feuillet fournit d'excellents renseignements sur les émanations des gaz de combustion. Il présente certains symptômes et vous indique certaines mesures pratiques que vous pouvez prendre pour réduire les risques. Bref, cette publication est conçue pour vous aider à vous assurer que les gaz de combustion sont bel et bien évacués de votre maison.

NOTE: Also available in English under the title: *Combustion Gases in Your Home: Things You Should Know About Combustion Spillage.*

### Ongoing Projects/Projets en cours

#### ADVICE ON THE DRAFTING OF EMISSION TEST STANDARDS

**Objective:**

Provide specific advice on improving three draft emission test standards.

**CMHC Project Officer:**

J. White

**Division:**

Research Division

**Contractor:**

Stewart S. Fritts  
2415 Lazybrook  
Houston, Texas  
77008

**CIDN:**

0200002

#### DEVELOPING TOOLS FOR MEASURING THE PERFORMANCE OF MOLD-TROUBLED HOUSING

**Objective:**

To develop tools for measuring the performance of mold-troubled housing.

**CMHC Project Officer:**

J. White

**Division:**

Research Division

**Contractor:**

Appin Associates  
472 Academy Road  
2nd Floor  
Winnipeg, Manitoba  
R3N 0C7

**CIDN:**

1243 0200002

#### DEVELOPMENT OF A MECHANICAL SYSTEM FOR A RESIDENTIAL CLEAN HOME

**Objective:**

To determine the best mechanical system or systems that will provide heating and ventilation for the "clean" addition to an existing house.

**CMHC Project Officer:**

V. Salares

**Division:**

Research Division

**Contractor:**

Drerup-Armstrong Ltd.  
P.O. Box 130  
Carp, Ontario  
K0A 1L0

**CIDN:**

1213 1100001  
1213 1101001

#### EMISSION TESTING OF SELECTED BUILDING MATERIALS

**Objective:**

To conduct emission tests on groups of selected building materials (caulks, sealants, urethane foam, and pressed wood products).

**CMHC Project Officer:**

V. Salares

**Division:**

Research Division

**Contractor:**

National Research Council  
Institute for Research in  
Construction  
Montreal Road  
Ottawa, Ontario  
K1A 0R6

**CIDN:**

0964 1100002

# **AN EVALUATION OF THE BARRHAVEN HOUSING PROJECT**

## **Objective:**

To undertake an evaluation of the Barrhaven housing project, a housing project in Ottawa, Ontario designed for the environmentally hypersensitive; to survey the occupants and landlord to assess whether their needs are being met and what advantages or limitations are encountered with this type of housing.

## **CMHC Project Officer:**

V. Salares

## **Division:**

Research Division

## **Contractor:**

Flett Consulting Groups Inc.  
130 Slater Street, Suite 750  
Ottawa, Ontario  
K1P 6E2

## **CIDN:**

1323 0200001  
1323 1100001

# **AN EVALUATION OF THE SCREENING MEASUREMENT AS AN INDICATOR OF AVERAGE ANNUAL INDOOR RADON EXPOSURE**

## **Objective:**

Assess the short term screening measurement as an indicator of the average annual radon levels in homes.

## **CMHC Project Officer:**

M. Macpherson

## **Division:**

Research Division  
External Research Program

## **Contractor:**

Michael W.R. LaFontaine  
LaFontaine Consulting  
Services  
106 Krug Street  
Kitchener, Ontario  
N2H 2X9

## **CIDN:**

1276 0200001

# **EXTERNAL REVIEW OF CMHC PROJECT ON EMF (ELECTROMAGNETIC FIELDS) IN CANADIAN HOUSING**

## **Objective:**

To provide an external specialist review of CMHC's exploratory survey project on EMF in Canadian housing which will include a literature review, a field survey of 25 Canadian houses, and a final report.

## **CMHC Project Officer:**

C. Ives

## **Division:**

Research Division

## **Contractor:**

Dr. Paul Heroux  
McGill University School of  
Occupational Health  
1130 Pine Avenue West  
Montreal (Québec)  
H3A 1A3

ENERGETICS Inc.  
7164 Columbia Gateway Drive  
Columbia, MD  
21046

## **CIDN:**

1051 0200003  
1051 0200002

# **GOOD HOUSES, BAD HOUSES, WALLACEBURG PHASE II**

## **Objective:**

A study of the performance of houses and the health of people in them.

## **CMHC Project Officer:**

J. White

## **Division:**

Research Division

## **Contractor:**

Morrison Hershfield Limited  
4 Lansing Square  
North York, Ontario  
M2J 1T1

## **CIDN:**

1368 02401

# **MECHANICAL SYSTEM FOR THE CMH4C HOUSE**

## **Objective:**

To supply a prototype mechanical system for a prefab house designed specifically for people who are environmentally hypersensitive.

## **CMHC Project Officer:**

P. Russell

## **Division:**

Research Division

## **Contractor:**

Geddes Enterprises  
45 Massey Lane  
Bramalea, Ontario  
L6S 2V8

## **CIDN:**

0928 1103001

# ENVIRONMENTAL POLLUTION AND CONTROL/ POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

## Ongoing Projects/Projets en cours

### A PLANNING MODEL FOR ESTIMATION OF PHOSPHORUS LOADING FROM ON-SITE SYSTEMS

#### Objective:

A systematic examination of the variables that may control phosphorus contributions to lakes. The model will recognize loadings leaving an on-site system, differences between failed systems and normal operation, geology, and soils.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Dr. Donald H. Waller  
Technical University of N.S.  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

#### CIDN:

0918 0200001

### SOIL GASES IN HIGH-RISE APARTMENT BUILDINGS

#### Objective:

To investigate how soil gases enter high-rise apartment buildings, and to see whether underground parking structures act as a barrier to soil gas entry.

#### CMHC Project Officer:

D. Fugler

#### Division:

Research Division

#### Contractor:

Jacques Whitford  
Environment Limited  
2781 Lancaster Road  
Suite 200  
Ottawa, Ontario  
K1B 1A7

#### CIDN:

1374 0200001

### STUDY OF ENVIRONMENTAL (AND RELATED) LABELING ORGANIZATIONS IN THE CANADIAN MARKETPLACE

#### Objective:

To conduct a study that will provide comparative information on major organizations involved in research, development or promotion of guidelines, standards or rating systems that are used to identify the environmental attributes of products.

#### CMHC Project Officer:

P. Gallant

#### Division:

Research Division

#### Contractor:

Environment Canada  
Ottawa, Ontario  
K1A 0H3

#### CIDN:

1484 0200001

### SURVEY OF ADVERSE HEALTH EFFECTS OF MOULD EXPOSURE

#### Objective:

To support the survey called "The Respiratory Health Effects of Indoor Moulds". This study will look at about 500 houses to identify how much biologically-active material there is in house air and dust. Frequency of cough will also be measured and compared to parental reports. In the final phase, the health of occupants will be assessed as well as the reasons for moisture problems in 100 of the houses.

#### CMHC Project Officer:

J. White

#### Division:

Research Division

#### Contractor:

Health and Welfare Canada  
Bureau of Chemical Hazards  
Environmental Health Centre  
Room 130, Tunney's Pasture  
Ottawa, Ontario  
K1A 0L2

#### CIDN:

0843 0201001

### A SURVEY OF ELECTROMAGNETIC FIELD LEVELS IN CANADIAN HOUSING

#### Objective:

To review the state-of-the-art in knowledge and housing research into EMF and prepare an interim report, to conduct a field survey of EMF levels in representative housing, and to prepare a report on the findings with recommendations for remedial measures.

#### CMHC Project Officer:

C. Ives

#### Division:

Research Division

#### Contractor:

The Planetary Association for  
Clean Energy Inc.  
100 Bronson Avenue  
Suite 1001  
Ottawa, Ontario  
K1T 6G8

#### CIDN:

1051 0200001



#### **HOUSING THE NEW FAMILY: REINVENTING HOUSING FOR FAMILIES.**

*Prepared by Laura C. Johnson. Ottawa: Canada Mortgage and Housing Corporation, Centre for Future Studies in Housing and Living Environments, 1995.*

This report analyzes a set of case studies of family housing projects in Canada and abroad. These various medium-density housing designs illustrate ways that family-oriented amenities and services can be integrated into the residential environment, providing convenience, reducing commuting time and distance, and facilitating opportunities for social interaction among residents, both children and adults. The study then probes the appeal of these new housing ideas for the general population of young Canadian families. An original survey of 450 households of young families in Canada's three largest metropolitan areas examines reactions to new concepts of higher-density, family-oriented housing.

The lessons from the survey bring a mixed message to housing developers and planners seeking to intensify housing stock and to develop higher-density housing for families. On the one hand, the survey suggests a relatively high level of public acceptance of a housing model that incorporates higher-density housing with family-oriented amenities. One half of surveyed families indicate that -- at least in the abstract -- they would choose such an alternative. When presented with a detailed description of the new, higher-density housing model with more amenities, one quarter of the family households surveyed find the model "very appealing". On the other hand, analysis of these housing preferences indicate that it is a particular segment of the young Canadian families that finds this form of housing appealing. These are the households that have fewer resources than the general population of families -- those with lower incomes, the single-parent households, and those currently renting accommodations.

The survey results reveal a mismatch between young families' expectations about housing options and the realities that they face in the housing market. Concerns about privacy and security motivate a general preference among young families for detached homes in remote suburbs. In fact, the case studies indicate that new models of higher-density housing can address these issues.

NOTE: Aussi disponible en français sous le titre : *Loger la famille nouvelle : réinventer le logement des familles.*

#### **LOGER LA FAMILLE NOUVELLE : RÉINVENTER LE LOGEMENT DES FAMILLES.**

*Préparé par Laura C. Johnson. Ottawa : Société canadienne d'hypothèques et de logement, Centre d'études prospectives sur l'habitation et le cadre de vie, 1995.*

Le rapport contient l'analyse d'un nombre d'études de cas sur des logements pour familles, au Canada et à l'étranger. Ces divers concepts d'habitation à moyenne densité témoignent des façons d'intégrer au milieu résidentiel les commodités et les services axés sur les familles, réduisant ainsi le temps et la distance de déplacement et facilitant l'interaction entre les résidents, autant les enfants que les adultes. L'étude sonde également l'intérêt suscité par ces nouvelles idées en matière d'habitation auprès des jeunes familles canadiennes. Une enquête originale menée auprès de 450 de ces familles dans les trois plus grandes régions métropolitaines du Canada porte sur les réactions aux nouveaux concepts d'habitation à forte densité pour les familles.



## FAMILIES/FAMILLES

Les leçons tirées de l'enquête annoncent un message variable à l'intention des promoteurs immobiliers et des urbanistes qui cherchent à faire progresser le stock de logements et à construire des habitations à forte densité pour les familles. D'une part, l'étude révèle qu'un pourcentage relativement élevé du public accepte un modèle d'habitation comprenant une plus forte densité et des commodités axées sur la famille. La moitié des familles sondées affirment, du moins dans le résumé, qu'ils choisiraient une telle option. Après avoir pris connaissance d'une description détaillée du nouveau type d'habitation à forte densité assorti de plus de commodités, le quart des familles interrogées trouvent le modèle très intéressant. D'autre part, l'analyse de ces préférences révèle qu'un bon nombre des jeunes familles canadiennes trouve ce type d'habitation intéressant. Ce sont les ménages qui ont moins de ressources que la famille moyenne : les familles ayant un revenu plus faible, les familles monoparentales et celles ayant un loyer à payer.

Les résultats de l'étude révèlent une différence marquée entre les attentes des jeunes familles concernant les options de logement qui s'offrent à elles et les réalités auxquelles elles font face dans le marché du logement. Les préoccupations relatives à leur vie privée et à la sécurité incitent généralement les jeunes familles à choisir une maison individuelle dans une banlieue éloignée. En fait, les études de cas révèlent que les nouveaux modèles d'habitation à forte densité peuvent régler ce dossier.

NOTE: Also available in English under the title: *Housing the New Family: Reinventing Housing for Families.*

**LES MUNICIPALITÉS ET LES FAMILLES : PARTENAIRES DU DÉVELOPPEMENT : LES ACTES DU 6<sup>E</sup> COLLOQUE SUR «L'ACTION MUNICIPALE ET LES FAMILLES», BLAINVILLE, 10, 11, 12 JUIN 1994 = MUNICIPALITIES AND FAMILIES: PARTNERS IN DEVELOPMENT: PROCEEDINGS OF THE 6TH SYMPOSIUM, "MUNICIPAL ACTION AND FAMILIES", BLAINVILLE, JUNE 10, 11, 12, 1994.**

*Rédigé par Le Carrefour «Action municipale et familles». Beauport, Qué. : Publications MNH, 1994.*

Ces Actes résument chacune des séances du Colloque. Le programme du Colloque comprenait une séance plénière d'ouverture et de clôture, un dîner-causerie, une activité plénière et six ateliers sur les sujets suivants : La municipalité, les jeunes et la famille; Les personnes âgées, les grands-parents, la famille et la contribution des municipalités; Les familles et les relations interculturelles : l'affaire de tous; La municipalité et l'habitat pour les familles; La contribution des municipalités au développement des services de garde; et La municipalité, la famille et la nouvelle répartition de l'activité économique.

Quatre constatations majeures se dégagent du Colloque :

1. Les pouvoirs locaux favorisent la solidarité entre les familles;
2. Au delà du développement économique des régions, il y a le non moins important développement humain;
3. Les réalités familiales diffèrent selon le milieu : rural, semi-urbain ou urbain. Nos sociétés doivent respecter ces différences;
4. Le partenariat, cela implique la concertation entre les divers groupes d'âge, les institutions et les paliers de gouvernements.

NOTE: *Includes some text in English.*

# FIRE SPRINKLERS/EXTINCTEURS AUTOMATIQUES

## Ongoing Projects/Projets en cours

### **COSTS AND BENEFITS FOR MUNICIPALITIES OF MANDATORY RESIDENTIAL FIRE SPRINKLERS**

#### **Objective:**

This study will impartially assess on technically-justified economic grounds the costs and benefits to municipalities and other jurisdictions of mandatory installation of fire sprinklers in all new residential construction. Secondly, the assessment will identify the benefits and risks of automatic sprinklers, and the effects on construction costs, housing costs, and on maintenance and service costs.

#### **CMHC Project Officer:**

T. Kerwin

#### **Division:**

Housing Innovation Division

#### **Contractor:**

Arencon Inc.  
1401 Captain Court  
Mississauga, Ontario  
L5J 1A9

#### **CIDN:**

1235 0300002  
1235 0302001

### Ongoing Projects/Projets en cours

#### **DRAIN GAIN**

##### **Objective:**

To test and evaluate the drain gain, a waste water heat recovery exchanger and storage device aimed at the residential market.

##### **CMHC Project Officer:**

M. Macpherson

##### **Division:**

Research Division

##### **Contractor:**

Winston MacKelvie  
Box 1156  
Knowlton (Québec)  
JOE 1V0

##### **CIDN:**

1443 0200001

#### **SURVEY OF NORTH AMERICAN FURNACE HEAT EXCHANGER TEST METHODS**

##### **Objective:**

To survey Canadian and American gas utilities to find out what methods they use in field testing for heat exchanger leakage; obtain copies of test protocol and equipment lists; establish field use, acceptance and success of tests; analyze the data collected and recommend test methods that should be used in Canada.

##### **CMHC Project Officer:**

D. Fugler

##### **Division:**

Research Division

##### **Contractor:**

Canadian Gas Research  
Institute  
55 Scarsdale Road  
Toronto, Ontario  
M3B 2R3

##### **CIDN:**

1505 0200001

## HIGH-RISE CONSTRUCTION/CONSTRUCTION D'IMMEUBLES DE GRANDE HAUTEUR

Completed Reports/Rapports terminés

### **DÉFI IDÉES : MIEUX CONSTRUIRE : LE GUIDE DE L'INNOVATION EN MATIÈRE DE CONCEPTION ET DE CONSTRUCTION DE TOURS D'HABITATION.**

*Ottawa : Société canadienne d'hypothèques et de logement : Ressources naturelles Canada, CANMET 2000, 1995.*

Ce guide «Mieux construire» présente les innovations qu'il faut intégrer à la conception et à la construction d'immeubles résidentiels offrant un meilleur rendement. Son but est de présenter d'autres façons d'aborder les principes de conception et de construction des tours d'habitation, la mise en service des systèmes de l'immeuble et l'exploitation et l'entretien de l'immeuble. Le guide porte sur certains produits, systèmes et méthodes que l'industrie peut utiliser pour améliorer le rendement énergétique des tours d'habitation et décrit des méthodes permettant d'améliorer la qualité de l'air intérieur par la réduction des polluants et par la conception d'un système de ventilation qui tienne compte de l'infiltration d'air à travers l'enveloppe. Des considérations d'ordre pratique pour assurer un accès sans obstacle aux personnes souffrant d'une incapacité sont également identifiées. Dans bien des cas, le guide présente des concepts et des idées qui n'ont pas encore fait leurs preuves mais qui reflètent les concepts les plus récents permettant d'améliorer le rendement.

NOTE: Also available in English under the title: *IDEAS Challenge: Better Building: A Guide to Innovation in the Design and Construction of High-Rise Residential Buildings.*

### **IDEAS CHALLENGE: BETTER BUILDING: A GUIDE TO INNOVATION IN THE DESIGN AND CONSTRUCTION OF HIGH-RISE RESIDENTIAL BUILDINGS.**

*Ottawa: Canada Mortgage and Housing Corporation: Natural Resources Canada, CANMET C-2000, 1995.*

This "Better Building Guide" is designed to reflect the innovations which are required in the design and construction of better performing high-rise residential buildings. It is intended to present alternative ways of thinking about design principles for high-rise buildings, to provide some different approaches to construction, building system commissioning, building operations and maintenance. The guide provides an overview of some of the products, systems and approaches available to improve the energy performance of high-rise buildings and describes ways to enhance indoor air quality through the reduction of pollutants and the design of a ventilation system which accounts for envelope air leakage. Practical considerations for ensuring barrier-free access for people with disabilities have also been identified. In many cases, the Guide presents concepts and ideas which may not be field tested, but which reflect recent thinking about improving performance.

NOTE : Aussi disponible en français sous le titre : *Défi IDÉES: mieux construire : le guide de l'innovation en matière de conception et de construction de tours d'habitation.*



# HIGH-RISE CONSTRUCTION/CONSTRUCTION D'IMMEUBLES DE GRANDE HAUTEUR

## **SIMULATION DE LA PLUIE BATTANTE ET DE LA DISTRIBUTION DU MOUILLAGE SUR LES BÂTIMENTS.**

*Préparé par D. Inculet et D. Surry. Préparé pour la Division de l'innovation dans l'habitation, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1995.*

Désireuse de trouver des méthodes permettant de réduire la pénétration de la pluie dans les immeubles résidentiels de grande hauteur et d'accroître la résistance des types de construction, la Société canadienne d'hypothèques et de logement a parrainé une recherche portant sur la modélisation de la pluie battante. La pluie a été simulée au moyen d'une batterie de neuf buses dans le tunnel aérodynamique de couche limite numéro deux de l'University of Western Ontario. Les essais se sont faits en deux phases. La première consistait à étudier l'effet de la vitesse et de l'angle du vent sur les distributions du mouillage sur un bâtiment «de référence», avec un regard exploratoire sur l'effet des caractéristiques de surface -- dans ce cas, des balcons. La deuxième était une étude de l'effet de la hauteur du bâtiment et des détails architecturaux de plus grande taille tels que les corniches et les toits pointus.

La distribution du mouillage était «classique» sur la face exposée au vent et le coin supérieur était le plus mouillé, suivi par les bords supérieur et latéraux. Dans les coins supérieurs, les facteurs d'intensité locale variaient de 0,15 à 2,5 environ selon les cas, et les coins recevaient de 2 à 50 fois plus de pluie que la région centrale de la face. Le mur latéral reste relativement sec. Avec un vent oblique, le mouillage peut être encore important le long du bord supérieur, du bord amont et parfois même du bord aval pour des obliquités de 30, 45 et 60 degrés. Les facteurs d'intensité locale peuvent augmenter de façon assez importante avec la vitesse du vent. La distribution générale du mouillage sur un mur exposé au vent reste la même quelle que soit la hauteur du bâtiment bien que l'intensité du mouillage le long du bord supérieur augmente probablement avec la hauteur. Les corniches et les toits pointus peuvent réduire les impacts de pluie sur la face avant, tout en offrant des possibilités d'écoulement et, par suite, de protection contre la migration de surface.

NOTE: Also available in English under the title: *Simulation of Wind-Driven Rain and Wetting Patterns on Buildings.*

## **SIMULATION OF WIND-DRIVEN RAIN AND WETTING PATTERNS ON BUILDINGS.**

*Prepared by D. Inculet and D. Surry. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

Seeking to find methods of reducing rain penetration problems in high-rise residential buildings and to increase the durability of building designs, Canada Mortgage and Housing Corporation has sponsored this research initiative into the modelling of wind-driven rain. Rain was simulated in the low speed test section of Boundary Layer Wind Tunnel II at the University of Western Ontario using an array of nine nozzles. Two phases of testing were conducted. The first was to study the effect of wind speed and wind angle on the wetting patterns for a "basic" building, with an exploratory look at the effect of surface features. The second phase was a study of the effect of building height and larger scale architectural features such as cornices and a peaked roof.

The "classic" wetting pattern was obtained on the windward face of a building in which the top corner is the wettest followed by the top and side edges. Local intensity factors in the top corners ranged from about 0.15 to 2.5 in the cases examined, with the corners being subjected to 2 to 50 times the rain impact as the central region of the face. The side wall remains relatively dry. For glancing wind angles, there can still be significant wetting along the top edge, upstream edge, and occasionally even the downstream edge for angles of 30, 45 and 60 degrees

between the building face and the wind direction. Local intensity factors can increase fairly significantly with increasing wind speed. The general wetting pattern on a windward wall remains the same regardless of building height, although the intensity of wetting along the top edge likely increases with increasing height. Cornices and peaked roofs may reduce rain impact on the front face, while providing a good opportunity for drainage and therefore protection of the building face from surface migration.

NOTE : Aussi disponible en français sous le titre : *Simulation de la pluie battante et de la distribution du mouillage sur les bâtiments.*

## Ongoing Projects/Projets en cours

### DEVELOPMENT OF A COMMISSIONING PLAN FOR THE WINNERS OF THE IDEAS CHALLENGE

#### Objective:

Develop a plan for commissioning the building envelope for thermal performance, airtightness and water penetration control to be utilized by the winners of the IDEAS Challenge.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Housing Innovation Division

#### Contractor:

Morrison Hershfield Limited  
2440 Don Reid Drive  
Ottawa, Ontario  
K1H 8P5

#### CIDN:

0840 0306001

### INDUSTRY GUIDELINES ON THE COMPARTMENTALIZING OF THE PRESSURE EQUALIZED CAVITY

#### Objective:

To produce industry guidelines on the compartmentalizing of the pressure equalized cavity.

#### CMHC Project Officer:

P.-M. Busque

#### Division:

Housing Innovation Division

#### Contractor:

Boundary Layer Wind Tunnel  
Laboratory  
University of Western Ontario  
London, Ontario  
N6A 5B9

#### CIDN:

1123 0300002

### INVESTIGATE THE EFFECTS OF COMPARTMENTALIZING APARTMENTS OF HIGH-RISE BUILDINGS TO REDUCE STACK PRESSURES

#### Objective:

To carry out a study to investigate the effects of compartmentalizing apartments of high-rise buildings to reduce stack pressures.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Housing Innovation Division

#### Contractor:

Morrison Hershfield Limited  
2440 Don Reid Drive  
Ottawa, Ontario  
K1H 8P5

#### CIDN:

1331 0300001

### OPERATING MECHANICAL AND ELECTRICAL EQUIPMENT AND SYSTEMS IN MEDIUM AND HIGH-RISE RESIDENTIAL BUILDINGS

#### Objective:

To develop reference documents and training materials for operating mechanical and electrical equipment and systems in medium and high-rise residential buildings.

#### CMHC Project Officer:

W. Webster

#### Division:

Research Division

#### Contractor:

Efficiency Engineering  
Incorporated  
978 Mary Avenue  
Cambridge, Ontario  
N3H 4N5

#### CIDN:

1250 0200001

## HOME OWNERSHIP/HABITATIONS – POSSESSION

### Ongoing Projects/Projets en cours

#### **AN EXAMINATION OF THE FEASIBILITY OF DEVELOPING A CANADIAN HOMEOWNER'S MANUAL**

##### **Objective:**

To determine whether the development of a home-owner's manual is a feasible and appropriate undertaking for CMHC and, if so, identify the most effective ways in which it can be produced and delivered and maintained.

##### **CMHC Project Officer:**

F. Grammenos

##### **Division:**

Research Division

##### **Contractor:**

Reid/Foster Associates  
55 Rosebery Avenue  
Ottawa, Ontario  
K1S 1W1

##### **CIDN:**

1314 0200001

#### **ESTIMATING HOMELESSNESS**

**Objective:**

To develop a methodology for estimating the number of homeless people in individual cities/areas.

**CMHC Project Officer:**

J. Angus

**Division:**

Research Division

**Contractor:**

P. Lynn McDonald  
Centre for Applied Social  
Research  
Faculty of Social Work  
University of Toronto  
246 Bloor Street West  
Toronto, Ontario  
M5S 1A1

**CIDN:**

1247 0200001

#### **THE HOUSING NEEDS OF HOMELESS CANADIANS**

**Objective:**

To collect data from shelters, hostels, social agencies, private agencies, and public sources in the Toronto area. To interview homeless persons as well as those who work with the homeless.

**CMHC Project Officer:**

J. Engeland

**Division:**

Research Division  
External Research Program

**Contractor:**

Dr. Thomas Fleming  
Department of Sociology and  
Anthropology  
University of Windsor  
Windsor, Ontario  
N9B 3P4

**CIDN:**

0748 0200001

#### **INVENTORY OF PROJECTS AND PROGRAMS ADDRESSING HOMELESSNESS**

**Objective:**

To produce a selected inventory of programs and projects addressing homelessness completed since the 1987 International Year of Shelter for the Homeless.

**CMHC Project Officer:**

B. Baxter

**Division:**

Policy Development

**Contractor:**

Focus Consulting  
40 Java Street  
Ottawa, Ontario  
K1Y 3L3

**CIDN:**

1473 0100001



# HOUSE CONSTRUCTION/ HABITATIONS - CONSTRUCTION

## Completed Reports/Rapports terminés

### ALTERNATIVE FLOOR BRIDGING SYSTEM.

*Prepared by BRIG-EEZ Incorporated. Prepared for Housing Technology Incentives Program, Canada Mortgage and Housing Corporation. Ottawa: CMHC, c1992, 1995.*

This project was initiated to develop and test various prototypes of cross-bridging systems and to confirm the viability of an alternative cross-bridging product, the BRIG-EEZ system, for wood floor construction. Following computer modelling, initial samples of cross-bridging were constructed. A 12' X 20' test bed was constructed using 2" X 8" joists and was allowed to dry for 15 days. Standard 2" X 2" wood cross-bridging with bottom strapping was installed and controlled weight was applied to various joists. This procedure was repeated using the standard 2" X 2" cross-bridging, but with the continuous bottom strap removed. Then, 25% of the cross-bridging was removed and replaced with the BRIG-EEZ system. The performance of the BRIG-EEZ system was equal to or better than the combined 2" X 2" cross-bridging with continuous strapping on the bottom side of the joists.

### Ongoing Projects/Projets en cours

#### CANADIAN WOOD-FRAME HOUSE CONSTRUCTION PUBLICATION

##### Objective:

The publication, "Canadian Wood-Frame House Construction", will be revised and updated to include those new technological advancements and construction techniques. The changes will also take into account the upcoming revisions which are to be included in the 1995 edition of the National Building Code as well as any additional up-to-date information on the environmental and energy concerns of today. The concept of healthy housing shall be incorporated into this publication.

##### CMHC Project Officers:

D. Smith  
T. Marshall

##### Division:

Housing Innovation Division

##### Contractor:

Habitechnica  
88 Prince Arthur Avenue  
Toronto, Ontario  
M5R 1B6

##### CIDN:

1413 0300001

#### A GLOSSARY OF HOUSE-BUILDING AND SITE-DEVELOPMENT TERMS

##### Objective:

To revise and update the publication "A Glossary of House-Building and Site-Development Terms".

##### CMHC Project Officer:

T. Marshall

##### Division:

Housing Innovation Division

##### Contractor:

Galbraith Communications  
Suite 200  
400 Laurier Avenue West  
Ottawa, Ontario  
K1R 7X6

##### CIDN:

1413 0300001

#### HOUSING DE-CONSTRUCTION

##### Objective:

To investigate and carry out a de-construction procedure on a house to make it more economically and environmentally viable compared to current housing demolition practices.

##### CMHC Project Officer:

M. Macpherson

##### Division:

Research Division

##### Contractor:

Design Consultants  
2-417 Bronson Avenue  
Ottawa, Ontario  
K1R 6J6

##### CIDN:

1439 0200001

**OPTIMISATION DE  
LA PERFORMANCE D'UN  
PROCÉDÉ DE RESURFACAGE  
DE MURS DE BÉTON OU DE  
MAÇONNERIE**

**Objet :**

Étude visant à améliorer le  
procédé de fabrication et les  
performances générales d'un  
nouveau procédé de  
revêtement pour bâtiment.

**Agent de projet pour la SCHL :**

M. Macpherson

**Division :**

Division de la recherche

**Contractant :**

Michel Fortin  
Fortex Inc.  
1415 rue St-Pierre Ouest  
App. 5  
St-Hyacinthe (Québec)  
J2T 1P3

**NIC :**

1266 0200001

## Ongoing Projects/Projets en cours

### THE CANADIAN EXPERIENCE TO DATE WITH HOUSING RELATED SAFETY AUDIT TOOLS

#### Objective:

This research project is intended to examine the issue of personal security and housing through two sub projects. The first project involves the development of a status paper of the current work being done by various groups in the development and use of housing-related safety audit tools. The second will provide a critical review of the work done on housing-related safety and security standards.

#### CMHC Project Officer:

J. Taggart

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

The Women's Action Centre  
Against Violence  
1206-170 Laurier Avenue West  
Ottawa, Ontario  
K1P 5V5

#### CIDN:

1299 0100001

### FUTURE ECONOMIC CONDITIONS AND THE HOUSING SECTOR

#### Objective:

To study the potential impacts of various scenarios of long term economic conditions, including the possibility of deflation, for the housing sector. The research will include a review of the general conditions associated with continued slow economic growth and deflationary contraction and pay special attention to the behaviour of households, the housing

industry and financial institutions in such contexts. Through the development of scenarios of future economic conditions, the study will explore the implications for various components of the housing sector.

#### CMHC Project Officer:

D. Chamberland

#### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments  
Experts in Residence Program

#### Contractor:

Nicole Morgan  
377 Maple Lane  
Ottawa, Ontario  
K1M 1H7

#### CIDN:

1015 0202001

### HIFE-BASED HOUSE PRICE INDEXES FOR CANADIAN CITIES AND MLS AVERAGE PRICES

#### Objective:

To provide an inexpensive price index showing house price change in Canadian CMA's starting in 1990; to provide evidence on the reliability of the MLS price averages as price indexes for Canadian CMA's.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Mrs. Marion Steele  
Associate Professor  
Department of Economics  
University of Guelph  
Guelph, Ontario  
N1G 2W1

#### CIDN:

1288 0200001

### HOUSING A DIVERSE SOCIETY

#### Objective:

Canadian society is undergoing a number of changes, including a proliferation of non-traditional family structures and household types, and increased ethnicity in the population mix. This project will raise awareness and better define the challenge of ensuring that the housing market meets the needs of Canada's diversifying population, and will illustrate what society can do to address this issue. A report will be prepared on the subject of "Housing A Diverse Society" and will be presented at the symposium called "Housing Affordability in a Changing Society". It will also serve as a starting point for developing an action plan for follow-up research work that should be done on this subject.

#### CMHC Project Officer:

J. Mugford

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

Prairie Research Associates  
Inc.  
306-326 Broadway  
Winnipeg, Manitoba  
R3C 0S5

#### CIDN:

1352 0100001



# MAXIMIZATION OF COMMUNITY BENEFITS DERIVED FROM HOUSING PROGRAMS IN REMOTE COMMUNITIES

## Objective:

This project was designed to help remote communities realize full benefits of self-help housing programs (RNH demo projects) and, to explore opportunities for further application in community economic development of skills the residents developed through self-help housing programs.

The community identified for study was Sheshatshiu, Labrador.

The project comprises three stages which are:

- A community survey of skills and skill levels, especially those gained in conjunction with RNH housing development, towards the development of a community skill inventory;
- The assessment of these skills relative to potential initiatives in community economic development; and
- The development of a "How To" manual which other communities could use to replicate the inventory and assessment process.

## CMHC Project Officer:

P. Deacon

## Division:

Strategic Planning and Policy Development Division

## Contractor:

Terpstra and Associates Ltd.  
324 Hamilton River Road  
P.O. Box 10, Station "A"  
Goose Bay, Newfoundland  
A0P 1S0

## CIDN:

0798 0100001

# MEASURING THE EFFECTS OF MUNICIPAL REGULATION ON HOUSE PRICES AND RENTS

## Objective:

A background paper will be prepared to identify what CMHC and its housing partners can do, and the contributions each partner can make, to quantitatively measure the impact of municipal regulations on house prices and rents. It will be presented for discussion at the CMHC-hosted symposium, "Housing Affordability in a Changing Society", on November 2, 1995, with a view to developing a research plan for additional work to be carried out on it in 1996.

## CMHC Project Officer:

David Scherlowski

## Division:

Policy Development Division

## Contractor:

Tsuriel Somerville  
Faculty of Commerce - UBC  
2053 Main Mall  
Vancouver, BC  
V6T 1Z2

## CIDN:

1494 01000001

# PRESTON DEMONSTRATION

## Objective:

To determine the viability of a self-built housing assistance option in an urban setting.

## CMHC Project Officer:

R. Lajoie

## Division:

Senior Vice-President's Office  
Policy, Research and  
Communications

## Contractor:

The Nova Scotia Department  
of Housing and Consumer  
Affairs

Alderney Gate  
40 Alderney Drive, 5th Floor  
P.O. Box 815  
Dartmouth, Nova Scotia  
B2Y 3Z3

## CIDN:

1011 0600001

# PROCEEDINGS OF THE HABITAT 94 CONFERENCE

## Objective:

To support production of proceedings of the Habitat 94 conference - a joint conference between the Canadian Institute of Planners and the International Federation of Housing and Planning.

## CMHC Project Officer:

D. Chamberland

## Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

## Contractor:

Canadian Institute of Planners  
541 Sussex Drive  
2nd Floor  
Ottawa, Ontario  
K1N 6Z6

## CIDN:

1295 0200002



### Ongoing Projects/Projets en cours

#### ROLE OF HOUSING IN AN ENABLING SOCIETY

##### Objective:

Analyze and discuss the various roles housing policy can play in the context of the enabling society model. Propose various ways housing policies can be used to promote the philosophy of the enabling society while elaborating on CMHC's role in this regard.

##### CMHC Project Officer:

E. Nera

##### Division:

Strategic Planning and Policy Development Division

##### Contractor:

Ekos Research Associates  
275 Sparks Street  
Suite 801  
Ottawa, Ontario  
K1R 7X9

##### CIDN:

1006 0100001

#### TRENDS -- HOUSING AND URBAN COMMUNITIES IN THE FUTURE

##### Objective:

A background paper, based on existing public opinion research, will be prepared to describe the views potential first-time homebuyers have towards housing and urban communities, and the reasoning behind their views by addressing the following four broad questions:

- (1) Investment: To what extent would potential first-time homebuyers consider housing as a good investment?
- (2) New Economy: What does the "New Economy" mean to potential first-time homebuyers from a housing perspective?
- (3) Fiscal Situation: How do potential first-time homebuyers see the fiscal situation impacting them from a housing perspective?
- (4) Environment: What do potential first-time homebuyers think about housing from an environmental perspective, both indoor and outdoor environment? The background paper will be presented by the contractor at the CMHC-hosted symposium, "Housing Affordability in a Changing Society", on November 2, 1995.

##### CMHC Project Officer:

David Scherlowski

##### Division:

Policy Development Division

##### Contractor:

Dr. Darrell Bricker  
Angus Reid Group, Inc.  
1400 - 1 Nicholas Street  
Ottawa, Ontario  
K1N 7B7

##### CIDN:

1490 0100001

#### TRI-COUNTRY CONFERENCE 1994

##### Objective:

To support the production of 12 policy research papers addressing the broader influences and possible directions for housing policy in each of Canada, the U.S. and the U.K. and to ensure the effective exchange of these research findings among academics and practitioners from each of the three countries.

##### CMHC Project Officer:

D. Chamberland

##### Division:

Research Division  
Centre for Future Studies in Housing and Living Environments

##### Contractor:

Fannie Mae  
Office of Housing Policy Research  
3900 Wisconsin Avenue N.W.  
Washington, D.C.  
20016

##### CIDN:

1206 0200001

### CANADIANS AND THEIR HOUSING EXPENDITURES, 1978-1992.

*Prepared by John Engeland. Based on studies completed by Boriss Mazikins for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

Events which occurred from the late 1970s through to the early 1990s make these years important to study. During this period the economy slid into recession, gradually recovered, then dipped again into recession. At the same time, Canadian society grew and changed dynamically. An examination of data from Statistics Canada's Family Expenditure Surveys (FAMEX) indicates that there were accompanying shifts in income and housing consumption for specific groups of Canadians. The nature of these changes is the subject of this report.

Aggregate statistics indicate that the overall shelter cost-to-income ratio for Canadians had remained stable at about 15 percent between 1978 and 1986, before shifting up to 16.3 percent by 1992. In-depth analysis revealed that beneath the apparent stability of the pre-1986 period, major socio-economic shifts were afoot and beginning to cause significantly more Canadians to pay more than the norm for their shelter. Finally, statistics were presented to show that, by 1992, an economic downturn had intensified the presence of instability in housing affordability. The result is that core housing need affordability continues to creep upward.

NOTE : Aussi disponible en français sous le titre : *Les Dépenses des Canadiens en matière de logement de 1978 à 1992.*

### LES DÉPENSES DES CANADIENS EN MATIÈRE DE LOGEMENT DE 1978 À 1992.

*Préparé par John Engeland. D'après des études réalisées par Boriss Mazikins pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994.*

Les événements qui se sont produits entre la fin des années 1970 et le début des années 1990 font de cette période un objet d'étude important. Au cours de ces années, l'économie a glissé dans la récession, a connu une reprise graduelle puis est retombée ensuite dans la récession. En parallèle, la société canadienne s'est développée et a connu une évolution dynamique. En étudiant les données de l'Enquête sur les dépenses des familles (EDF) de Statistique Canada, on constate des changements dans les revenus et la consommation de logement parmi des groupes bien définis de Canadiens. Ce rapport a trait à la nature de ces changements.

L'étude fait ressortir des données globales afin de montrer que dans l'ensemble, pour les Canadiens, le rapport des frais de logement au revenu était demeuré stable à environ 15 % entre 1978 et 1986, avant de monter à 16,3 % en 1992. Une analyse plus poussée a ensuite révélé que sous cette stabilité apparente de la période d'avant 1986, des changements socio-économiques majeurs se manifestaient et commençaient à forcer un nombre de plus en plus grand de Canadiens à assumer des frais de logement supérieurs à la norme. Enfin, l'auteur a présenté des statistiques montrant que dès 1992, un repli économique avait intensifié l'instabilité dans l'abordabilité du logement. Résultat : les problèmes d'abordabilité selon les critères de besoins impérieux de logement continuent de s'aggraver graduellement.

## Ongoing Projects/Projets en cours

### A GUIDE TO IMPROVING HOUSING AFFORDABILITY

**Objective:**

The development of a prototype issue of a guide that will enable housing producers and providers to review, examine and assess proven development, design and financing strategies that improve housing affordability with the objective of implementing them. The guide will use CD-ROM technology for the storing and retrieval of information.

**CMHC Project Officer:**

F. Grammenos

**Division:**

Research Division

**Contractor:**

McGill University  
815 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

**CIDN:**

0889 0200002

### SHELTER AFFORDABILITY AND HOUSING NEEDS OF CANADIAN FOOD BANK CLIENTS

**Objective:**

Will examine the relationship between food banks and housing, and produce a profile of the typical food bank client in Winnipeg, Manitoba, in regard to shelter needs and other socio-demographic variables.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Professor Jeff Sloan  
Manitoba Nursing Research  
Institute  
Faculty of Nursing  
University of Manitoba  
Winnipeg, Manitoba  
R3T 2N2

**CIDN:**

1099 0200001

### UPDATE OF REPORT "REGULATORY MECHANISMS TO FACILITATE THE PRODUCTION OF AFFORDABLE HOUSING"

**Objective:**

To update the report "Regulatory Mechanisms to Facilitate the Production of Affordable Housing" and in particular to address the developments that have occurred in Ontario and B.C. since the original report was produced.

**CMHC Project Officer:**

B. Gray

**Division:**

Research Division

**Contractor:**

Richard Drdla Associates  
415 1/2 Wellesley Street East  
Toronto, Ontario  
M4X 1H5

**CIDN:**

0892 0201001



# HOUSING AND IMMIGRATION/ LOGEMENT ET IMMIGRATION

## Completed Reports/Rapports terminés

### **SURVEY OF ISSUES AFFECTING RACIAL AND ETHNIC MINORITIES IN THE HOUSING SECTOR: FINAL REPORT.**

*Prepared by Ekos Research Associates Inc. Prepared for Strategic Planning and Policy Development Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

This study presents the results of a survey of government and non-government organizations which was conducted to establish the specific housing problems and priority issues of ethnic and racial minorities living in Canada. The purpose of the survey was to provide sound information on the relevant issues and identify existing gaps in the housing services available to minorities. A directory of organizations serving racial and ethnic minorities was compiled as a component of the study and can be found in Appendix B.

Representatives of organizations participating in the survey perceived affordability as being the most significant problem facing minorities, particularly immigrants. The issue of discrimination was a concern for many ethnic and community organizations. Almost all organizations reported that clients face discrimination from landlords; many said that minorities also face discrimination from other sources in the community, including their neighbours. The language barrier was rated as a large problem especially for recent immigrants. Respondents all thought that community organizations should have a role in providing information and services in the language of the client. They also identified the need for more housing-related services such as vacancy registries as well as the need for more social housing and better housing orientations.

## Ongoing Projects/Projets en cours

### **A COMPARATIVE STUDY OF IMMIGRANT HOUSING IN MONTREAL AND TORONTO**

#### **Objective:**

To address the linkages between housing, neighbourhoods and social networks among visible minority immigrant groups living in metropolitan Montreal and Toronto.

#### **CMHC Project Officer:**

M. Macpherson

#### **Division:**

Research Division  
External Research Program

#### **Contractor:**

Brian K. Ray  
McGill University  
805 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

#### **CIDN:**

1283 0200001

### **IMMIGRANT HOUSING CHOICES, 1991**

#### **Objective:**

To update and extend a recently completed study of immigrant housing choices based on 1986 census data. This study will describe differences between the housing choices of immigrants and non-immigrants in 1991 and compare findings to those of the previous study. 1986 and 1991 census data will be used to trace changes over time in the behaviour of individual immigrant cohorts. Through focus groups and statistical analysis of 1991 census data, the research will

attempt to identify factors underlying observed differences between immigrants and non-immigrants.

#### **CMHC Project Officer:**

R. Lewis

#### **Division:**

Research Division

#### **Contractor:**

Lapointe Consulting Inc.  
311 Markham Street  
Toronto, Ontario  
M6G 2K8

#### **CIDN:**

0854 0201001  
0854 0200002



## Ongoing Projects/Projets en cours

### CANADA'S EXPORTABLE HOUSING

**Objective:**

Selection of text and visual material suitable for inclusion in a forthcoming publication entitled "Canada's Exportable Housing" that is intended for foreign audiences.

**CMHC Project Officer:**

G. Duc

**Division:**

International Relations  
Division

**Contractor:**

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

**CIDN:**

1425 0901001

### CANADIAN HOUSING PRODUCTS AND SERVICES FOR CHINA

**Objective:**

To identify potential opportunities for Canadian manufactured products and services for the Beijing housing market.

**CMHC Project Officer:**

R. Duncan

**Division:**

Housing Innovation Division

**Contractor:**

McGill University  
School of Architecture  
815 Sherbrooke Street West  
Montreal (Québec)  
H3A 2K6

**CIDN:**

1263 0300001

### DEVELOPMENT OF A HOUSING MARKET STUDY IN CHINA

**Objective:**

To develop a housing market study that can be utilized by the Canadian housing industry to: pursue the commercial opportunities in China; provide housing exporters with guidelines and a strategy for operating in China; develop a data bank that can be updated and easily accessible to the entrepreneurs pursuing this market.

**CMHC Project Officer:**

A. Lucciola

**Division:**

International Relations  
Division

**Contractor:**

The Delta Partners  
32 Burrows Road  
Ottawa, Ontario  
K1J 6E6

**CIDN:**

1433 0900005

### DEVELOPMENT OF A RESEARCH METHODOLOGY FOR THE PROPOSED HOUSING MARKET STUDY IN CHINA

**Objective:**

To develop a methodology that can be used to research and represent in publishable form Canada's capacity to: pursue the commercial opportunities in China for the Canadian housing industry; and provide housing exporters with guidelines and a strategy for operating in China.

**CMHC Project Officer:**

A. Lucciola

**Division:**

International Relations  
Division

**Contractor:**

Chreod Limited  
Suite 200  
111 Sparks Street  
Ottawa, Ontario  
K1P 5B5

**CIDN:**

1433 0900003

### EXPORT STRATEGIES OF CANADA'S COMPETITORS IN INTERNATIONAL HOUSING MARKETS

**Objective:**

To examine the housing export capabilities of Canada's principal competitors in international housing markets as well as the strategic approaches that these countries use to do business internationally.

**CMHC Project Officer:**

G. Duc

**Division:**

International Relations  
Division

**Contractor:**

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

**CIDN:**

1369 0900001

**OPPORTUNITIES FOR  
CANADA'S HOUSING  
INDUSTRY IN KOBE, JAPAN:  
AN ASSESSMENT OF  
EXPORT-READINESS AND  
VIABLE STRATEGIES**

**Objective:**

To produce an assessment of housing opportunities in Kobe and Canada's capacity to respond; produce a companion listing of Canadian export-ready firms; produce a think-piece proposing a range of viable strategies designed to position the Canadian housing industry to respond to opportunities in Kobe.

**CMHC Project Officer:**

P. Burr

**Division:**

International Relations  
Division

**Contractor:**

Scanada Consultants Ltd.  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

**CIDN:**

1489 0900001

**OVERVIEW OF HOUSING  
EXPORT OPPORTUNITIES  
FOR CANADIANS**

**Objective:**

To undertake an analysis of the nature and sources of international demand for Canadian housing systems, products, services and technologies.

**CMHC Project Officer:**

G. Duc

**Division:**

International Relations  
Division

**Contractor:**

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

**CIDN:**

1293 0900006  
1294 0900001

**SOURCES OF SUPPORT FOR  
CANADA'S HOUSING  
EXPORTERS**

**Objective:**

To develop a directory of federal, provincial and other resources that can potentially support the strategic directions that are being proposed for Canada's housing industry.

**CMHC Project Officer:**

G. Duc

**Division:**

International Relations  
Division

**Contractor:**

Hill and Knowlton (Canada)  
Inc.  
55 Metcalfe Street  
Suite 1300  
Ottawa, Ontario  
K1P 6L5

**CIDN:**

1485 0900001

## Ongoing Projects/Projets en cours

### ALTERNATIVES FOR THE PLANNING AND DESIGN OF HOUSING IN ST. JOHN'S

#### Objective:

To explore alternatives for the planning and design of new low and medium density housing in St. John's, Newfoundland.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Robert Mellin, Architect  
89 Barnes Road  
St. John's, Newfoundland  
A1C 3X5

#### CIDN:

1095 0200001

### 4D ENVIRONMENTAL SIMULATION TO EVALUATE DESIGN ALTERNATIVES FOR MEDIUM DENSITY HOUSING

#### Objective:

To document and present sustainable planning and design alternatives for an existing subdivision in Calgary using ACV technology, and to use the generated digitized images for testing consumer receptivity of the alternatives.

#### CMHC Project Officer:

F. Grammenos

#### Division:

Research Division  
External Research Program

#### Contractor:

Richard Perron  
Dept. of Landscape  
Architecture  
University of Manitoba  
Winnipeg, Manitoba  
R3T 2N2

#### CIDN:

1279 0200001

### HABITATION ET FLEXIBILITÉ AU CANADA : BILAN 1991

#### Objet :

Construire une grille d'analyse permettant de dresser une typologie des solutions apportées par les architectes; et faire un rapport de synthèse proposant un bilan global des perspectives de résolution du problème de flexibilité dans un projet d'habitation.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Annie Chelin  
5780, rue Hutchison  
Outremont (Québec)  
H2V 4B6

#### NIC :

0911 0200001

### HABITATIONS NOUVELLES EN MILIEU ANCIEN

#### Objet :

La recherche porte sur les problèmes de design que posent l'implantation et l'intégration de nouvelles habitations dans les milieux résidentiels canadiens de facture plus ou moins homogène ou dans leurs zones limitrophes. Par extension, elle s'intéresse à toute opération de construction nouvelle en milieu ancien, qu'il s'agisse de recyclages, de rénovations ou d'agrandissements.

#### Agent de projet pour la SCHL :

M. Siedlikowski

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

Pierre-Richard Bisson  
Université de Montréal  
Case Postale 6128  
Succursale Centre-ville  
Montréal (Québec)  
H3C 3J7

#### NIC :

1450 0200001

### MONTRÉAL : UNE GRANDE TRADITION D'HABITAT À DENSITÉ MOYENNE

#### Objet :

Ce projet veut mettre en lumière les processus d'adaptation du logement et des types de bâtiments à travers les diverses phases de l'évolution des formules "plex" (duplex, triplex, quatre-plex, cinq-plex ...) à Montréal au cours de quatre cycles de constructions entre 1866 et 1935.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

David B. Hanna  
Université du Québec à Montréal  
Case postale 8888  
Succursale Centre-ville  
Montréal (Québec)  
H3C 3P8

#### NIC :

1455 0200001

**PASSIVE SOLAR HOUSE  
DESIGNS FOR CANADA**

**Objective:**

To identify relevant literature and design tools, analyze and interpret data in order to update the existing CMHC publication on passive solar house designs.

**CMHC Project Officer:**

F. Grammenos

**Division:**

Research Division

**Contractor:**

Leslie Jones & Associates Ltd.  
319 Catherine Street  
Ottawa, Ontario  
K1R 5T4

**CIDN:**

1241 0200001

**VILLE ST-LAURENT  
REVISITED: WARTIME  
HOUSING AND  
ARCHITECTURAL CHANGE,  
1942-92**

**Objective:**

To study a solution offered by the wartime housing effort and to test its lessons for today's housing problems.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Dr. Annmarie Adams  
School of Architecture  
McGill University  
815 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

**CIDN:**

1083 0200001

**VIRTUAL REALITY AND ITS  
POTENTIAL USES IN THE  
HOUSING SECTOR**

**Objective:**

To assess potential opportunities to apply virtual reality technology in Canadian urban planning and the housing sector. Particular attention will be given to the potential use of virtual reality in designing sustainable communities and accessible housing for the disabled and seniors. The final report will provide an overview of virtual reality technology and discuss examples of existing applications relevant to housing and urban development.

**CMHC Project Officer:**

D. Leong

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments  
Experts in Residence Program

**Contractor:**

John Thurston  
26 Standford Private  
Ottawa, Ontario  
K1T 3J3

**CIDN:**

1015 0202003



# HOUSING FORECASTING AND DEMAND/ PRÉVISION ET DEMANDE DE LOGEMENTS

## Ongoing Projects/Projets en cours

### CHILDREN LIVING IN TWO HOMES: JOINT CUSTODY AND DUAL RESIDENCES

#### Objective:

Through a literature review and a survey of families, this study will examine the overall magnitude and possible longer term implications of joint custody agreements for housing demand and the use and design of dwellings.

#### CMHC Project Officer:

D. Chamberland

#### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments  
Experts in Residence Program

#### Contractor:

Mr. Martin Wexler  
45, rue Chesterfield  
Westmount, Quebec  
H3Y 2M4

#### CIDN:

1015 0201001

### GENDER DIFFERENCES IN HOUSING DEMAND

#### Objective:

The study will identify and measure the difference in housing demand by men and women. The objective guiding the research plan is the search for the unique effects of changing employment and income opportunities for women on the housing behaviour. The work will involve "potential" as well as "permanent" income indexes by age group.

#### CMHC Project Officer:

T. Mitchell

#### Division:

Research Division  
External Research Program

#### Contractor:

André Skaburskis  
School of Urban and Regional  
Planning  
Queen's University  
Kingston, Ontario  
K7L 3N6

#### CIDN:

1465 0200001

### POTENTIAL HOUSING DEMAND PROJECTION MODEL

#### Objective:

To revise the PHD model use manual in preparation for the software release planned for later this year.

#### CMHC Project Officer:

R. Lewis

#### Division:

Research Division

#### Contractor:

Tetrad Computer  
Applications Ltd.  
1445 West Georgia Street  
Vancouver, British Columbia  
V6G 2T3

#### CIDN:

1405 0200001

### ÉVOLUTION DE LA DEMANDE DE LOGEMENT ET STABILITÉ DES PRIX IMPLICITES DES ATTRIBUTS RÉSIDENTIELS; UNE COMPARAISON 1986-1991

#### Objet :

La recherche consiste à étudier les modifications survenues entre 1986 et 1991 dans la structure de la demande de logement des ménages de la région de Québec. Le modèle hédonique «RÉSIVALU», mis au point il y a quelques années, a permis de tracer un portrait détaillé des préférences des ménages en matière de logement pour la période 1986-1987, et ce pour l'ensemble des sous-marchés de propriétaires-occupants sur le territoire de la Communauté urbaine de Québec (CUQ). Cette étude aura recours à un système d'information géographique en voie d'élaboration pour le territoire de la CUQ qui s'intégrera au modèle hédonique RÉSIVALU à régression multiple. Elle comparera la carte des préférences des ménages de 1986 à celle de 1991 et examinera les changements qui ont marqué les prix implicites des attributs des prix des maisons. L'étude permettra en outre de mesurer les déplacements fiscaux entre municipalités de la CUQ, les modifications des structures socio-économiques ainsi que l'étalement urbain.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division de la recherche  
Programme de subventions de recherche

#### Contractant :

François Desrosiers  
Professeur titulaire  
Université Laval  
Faculté des sciences de  
l'administration  
Sainte-Foy (Québec)  
G1K 7P4

#### NIC :

1275 0200001

### MATCHING BUYERS AND SELLERS IN THE RESALE HOUSING MARKET

#### Objective:

Matching buyers and sellers  
in the resale housing market.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Mr. Christopher T. Ragan  
Department of Economics  
McGill University  
855 Sherbrooke Street West  
Montreal, Quebec  
H3A 2T7

#### CIDN:

1098 0200001

### SEVEN SOURCES OF CHANGE IN VANCOUVER HOUSING PRICE

#### Objective:

To gain fundamental  
empirical insights into  
the sources of change in  
residential property values in  
the Vancouver area through  
detailed analysis and  
comparison of census and  
real estate data.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Dr. Eric J. Heikkila  
University of British Columbia  
2053 Main Mall  
Vancouver, British Columbia  
V6T 1Z2

#### CIDN:

1456 0200001

## Ongoing Projects/Projets en cours

### **INVENTORY OF RESEARCH AND INFORMATION PRODUCTS OF MEMBERS OF THE NATIONAL HOUSING RESEARCH COMMITTEE**

#### **Objective:**

To develop a computerized inventory of research and information products of members of the National Housing Research Committee to facilitate access to information on ongoing and planned housing research activities in Canada.

#### **CMHC Project Officer:**

T. McGregor

#### **Division:**

Research Division

#### **Contractor:**

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### **CIDN:**

1238 0200001  
1238 0201001

### **SYMPOSIUM INTERNATIONAL RELATIF AUX ENQUÊTES SUR L'HABITATION**

#### **Objet :**

D'évaluer les tendances passées et actuelles en ce qui a trait aux enquêtes sur l'habitation et de trouver de nouvelles théories et méthodes.

#### **Agent de projet pour la SCHL :**

J. Angus

#### **Division :**

Division de la recherche

#### **Contractant :**

Université de Laval  
Québec (Québec)  
G1K 7P4

#### **NIC :**

1493 0200001

## HOUSING SAFETY/SÉCURITÉ À DOMICILE

### Ongoing Projects/Projets en cours

#### HOUSING RELATED SAFETY AND SECURITY STANDARDS

**Objective:**

To identify key players both nationally and internationally who have been involved in the development of housing related safety and security standards.

**MHC Project Officer:**

J. Lightbound

**Division:**

Strategic Planning and Policy  
Development Division

**Contractor:**

B.C. Coalition for Safer  
Communities & Secure Design  
C/O The People's Law School  
150-900 Howe Street  
Vancouver, British Columbia  
V2Z 2M4

**CIDN:**

1299 0100002



## Completed Reports/Rapports terminés

### **TOWARD ESTABLISHING CANADIAN OBJECTIVES FOR HABITAT II: REPORT ON CANADIAN STAKEHOLDER MEETING, JANUARY 26, 1995.**

*Produced by Focus Consulting for International Relations Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

The purpose of this paper is to report on a meeting and consultation of Canadian stakeholders and partners interested in Canada's position at the forthcoming United Nations Conference on Human Settlements (Habitat II) to be held in Turkey, June 1996. The principal focus of a preceding telephone consultation and the meeting, held January 26, 1995, was to seek input on Canada's objectives for this world conference as well as to develop a process to facilitate ongoing consultation through the preparatory period. In addition, an update was provided by CMHC on preparations to date for Habitat II. Participants also shared information on the activities and plans of their own organizations.

This report presents a synthesis of the issues discussed at the meeting, with particular emphasis on:

- Canadian objectives for Habitat II;
- the consultation organization and structure;
- plans for producing the Canadian National Report;
- general timetable.

The report also includes redrafted objectives for consideration by stakeholders and the lead agency, CMHC.

NOTE : Aussi disponible en français sous le titre : *Vers l'établissement d'objectifs canadiens pour Habitat II : rapport sur la réunion des intervenants canadiens, le 26 janvier 1995.*

### **VERS L'ÉTABLISSEMENT D'OBJECTIFS CANADIENS POUR HABITAT II : RAPPORT SUR LA RÉUNION DES INTERVENANTS CANADIENS, LE 26 JANVIER 1995.**

*Produit par Focus Consulting pour la Division des relations internationales, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1995.*

L'objet de ce document est de présenter le compte-rendu d'une réunion et des consultations des intervenants et des partenaires canadiens en ce qui concerne la position du Canada lors de la prochaine Conférence des Nations Unies sur les établissements humains (Habitat II) qui aura lieu en Turquie en juin 1996.

L'objectif principal des consultations téléphoniques et de la réunion qui s'est tenue le 26 janvier 1995 était de connaître l'opinion des intéressés relativement aux objectifs du Canada à cette conférence internationale ainsi que de mettre en place un mécanisme qui permettrait d'assurer une consultation continue pendant la phase préparatoire. De plus, la SCHL a présenté une mise à jour sur les préparatifs en cours en vue d'Habitat II. Les participants ont également échangé de l'information sur les activités et les projets de leur propre organisation.

Ce rapport présente une synthèse des questions abordées et, en particulier une discussion sur les thèmes suivants :

- objectifs du Canada pour Habitat II;
- organisation et structure consultative;
- planification de la préparation du rapport du Canada;
- calendrier général des activités.

Le rapport comprend également une nouvelle formulation des objectifs proposés pour étude aux intervenants et à l'organisme responsable, la SCHL.

NOTE: Also available in English under the title: *Toward Establishing Canadian Objectives for Habitat II: Report on Canadian Stakeholder Meeting, January 26, 1995.*

## Ongoing Projects/Projets en cours

### VANCOUVER COLLOQUIUM

**Objective:**

To produce proceedings from the colloquium on "The Road to Istanbul: From Habitat I to Habitat II", being held in Vancouver from October 26 to 28, 1995.

**CMHC Project Officer:**

J. Smugler

**Division:**

International Relations  
Division

**Contractor:**

Simon Fraser University  
Burnaby, British Columbia  
V5A 1S6

**CIDN:**

1520 0900001

### **SYNTHÈSE DE LA RECHERCHE TECHNIQUE ET POSSIBILITÉ DE L'APPLIQUER AU RENOUVELLEMENT DES INFRASTRUCTURES LINÉAIRES.**

*Prépare par CH2M Engineering Ltd. Expert-conseil principal : Tom Field. Préparé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994.*

Cette étude porte sur un large éventail de matériaux, de pièces d'équipement et de stratégies de gestion conçus pour améliorer la performance des infrastructures linéaires et traiter des techniques et des démarches qui pourraient servir à constituer une base d'information sur la technologie disponible. En plus de relever les innovations technologiques reliées aux infrastructures d'eau et d'égouts présentement disponibles au Canada et ailleurs, le rapport résume les opinions les concernant, de sorte que les administrateurs municipaux, les ingénieurs et d'autres intervenants pourront comprendre la façon d'en tirer profit. Les questions relatives aux codes, aux cahiers des charges et aux autres mécanismes selon lesquels des méthodes et technologies efficaces peuvent être mises en oeuvre lors du renouvellement et de la réfection des infrastructures font aussi l'objet de l'étude.

Quelques-unes des constatations de l'étude sont présentées ci-dessous :

- L'état des infrastructures canadiennes varie en fonction de l'âge. Certaines sont en mauvais état et mal préparées pour fournir le service requis présentement, sans compter le degré de service plus élevé qui sera nécessaire dans les villes en expansion.
- Quand elles considèrent l'actif et l'investissement que représentent ces infrastructures, les municipalités ne voient que des solutions à court terme, au lieu d'envisager la durée réelle de l'actif. En général, les infrastructures d'eau et d'égouts ne sont pas entretenues adéquatement de sorte qu'il existe un sérieux besoin de trouver des façons d'optimiser la performance et de prolonger la durée des installations actuelles.
- D'importants travaux de recherche se déroulent en matière de conception et de gestion des infrastructures d'eau et d'égouts et ont déjà donné des innovations utiles. L'une des caractéristiques de cette recherche est le fait qu'elle est principalement financée par des fonds publics et se déroule dans des établissements fédéraux et provinciaux ainsi que dans des universités.
- Il existe des obstacles certains à l'application d'innovations à des projets et problèmes d'infrastructures d'eau et d'égouts, y compris la façon de les financer, de les concevoir, de les construire et de les exploiter.

NOTE: Also available in English under the title: *A Synthesis of Technical Research and Its Potential for Application in Linear Infrastructure Renewal.*

**INNOVATIVE  
INFRASTRUCTURE:  
MUNICIPAL EXPERIENCES**

**Objective:**

To present a very brief historical outline of the evolution of the design of the dominant Canadian municipal infrastructure systems and materials, to provide an examination of the technical causes for a range of failures in some of these systems; to place into context an identification of technologies to repair these failing systems; and to carry out a survey to identify durable repair technologies and to provide case studies on a number of examples which have been locally acceptable and affordable.

**CMHC Project Officer:**

A. Houston

**Division:**

Research Division

**Contractor:**

REIC Ltd.  
15010 Yonge Street  
Aurora, Ontario  
L4G 1M6

**CIDN:**

1219 0200001

**A STUDY ON ISSUES  
RELATED TO THE  
DISSEMINATION OF  
INFORMATION ON  
MUNICIPAL  
INFRASTRUCTURE**

**Objective:**

To study issues related to the dissemination of information on municipal infrastructure and assess the appropriateness of various mechanisms aimed at facilitating the dissemination of information.

**CMHC Project Officer:**

M.H. Pastor

**Division:**

Research Division

**Contractor:**

REIC Ltd.  
15010 Yonge Street  
Aurora, Ontario  
L4G 1M6

**CIDN:**

1396 0200001



## Ongoing Projects/Projets en cours

### DEVELOPMENT OF COMMERCIALLY VIABLE CONCEPTS AND A DESIGN FOR A RESIDENTIAL FRAMING SYSTEM FOR A MONOCOQUE HOUSE

#### Objective:

The development of commercially viable engineered structural concepts and a design for a monocoque framing system for residential structures which can be adopted by home builders for the construction of houses on unstable soils; monitoring of the demonstration of the system in a house construction project and a report of the results of the work for CMHC.

#### CMHC Project Officer:

R. Duncan

#### Division:

Housing Innovation Division

#### Contractor:

Gower, Yeung & Associates  
Ltd.  
615 Eighth Street  
Suite 201  
New Westminster, British  
Columbia  
V3M 3S3

#### CIDN:

0657 0300001

### MONOCOQUE CAVITY RIGID PANEL FOR WALL AND ROOF CONSTRUCTION

#### Objective:

To finalize the design of monocoque wall and roof panels and the locking joint assemblies for these panels, and produce prototype wall and roof panels for testing.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
Housing Technology  
Incentives Program

#### Contractor:

Ray-Co-Tech Inc.  
30, rue Des Frenes  
Bromont (Québec)  
JOE 1L0

#### CIDN:

1270 0200001

### THREE DECADES OF INNOVATION IN HOUSING TECHNOLOGY

#### Objective:

Prepare a manuscript to document and illustrate the evolution of Canadian housing technology, design and planning during the period 1966-1996, to complement the publication "Two Decades of Innovation in Housing Technology 1946-1965" prepared in 1994.

#### CMHC Project Officer:

P. Archer

#### Division:

Housing Innovation Division

#### Contractor:

Scanada Consultants Ltd.  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

#### CIDN:

1418 0300001

#### EVALUATION OF THE CLEAN-UP OF LEAD PAINT DUST IN HOUSES.

*Prepared by Pinchin Environmental Consultants Ltd. Principal Consultant: Bruce Stewart. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

A field research project was conducted to evaluate the effectiveness of various cleaning procedures for the clean-up of lead paint dust from floors. A total of 20 test rooms were identified in 9 houses in Windsor, Ontario. The presence of lead in paint was determined by on-site X-ray fluorescence measurement and laboratory chemical analysis. The test rooms were isolated and areas of lead paint were power-sanded to create airborne dust containing lead paint. Following a settling period, the floors were cleaned of dust by one of four methods, which included commonly used household cleaning methods, as well as specialized cleaning agents and procedures developed for clean-up after lead paint abatement. Wipe samples were taken before and after cleaning to determine the level of lead contamination. The results of post-cleaning samples were compared to the current and proposed U.S. federal guidelines for acceptable cleanliness after lead abatement, of 2,150 micrograms per square metre and 1,076 micrograms per square metre, respectively.

Two cleaning methods, one that used a combination of sweeping and a utility vacuum, and another that used a utility vacuum followed by mopping with a household cleaner, did not meet the U.S. criteria. These two methods represent the cleaning procedures commonly available to householders. Two more elaborate methods that used Ledizolv, a lead-specific cleaning agent, or trisodium phosphate, in combination with either a utility vacuum or a High Efficiency Particulate Air filtered vacuum both met the criteria. Airborne dust concentrations during power sanding of leaded paint were shown to be up to 83 times the currently recommended industrial exposure limit of 50 micrograms per cubic meter of air. Airborne concentrations were also elevated during dry sweeping with a broom.

## Ongoing Projects/Projets en cours

### ASSESSMENT OF THE CAPACITY TO USE STOCHASTIC MODELS IN BUILDING LIFE-CYCLE COSTING

#### Objective:

The study is an evaluation of how well easily collected, financial data reported on audited statements and supporting documentation about housing that is targeted towards low and moderate income households can be used in conjunction with well known probabilistic models to estimate long term maintenance, repair and replacement costs.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division  
External Research Program

#### Contractor:

Aron Spector  
Ark Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

#### CIDN:

1100 0200001

## MANUFACTURED HOUSING/HABITATIONS USINÉES

### Ongoing Projects/Projets en cours

#### **A STRUCTURAL ANALYSIS OF THE CANADIAN AND INTERNATIONAL MANUFACTURED HOUSING INDUSTRY**

##### **Objective:**

To enhance the international competitiveness of the Canadian manufactured housing industry.

##### **CMHC Project Officer:**

T. McGregor

##### **Division:**

Research Division

##### **Contractor:**

Canadian Manufactured  
Housing Association  
150 Laurier Avenue West  
Suite 200  
Ottawa, Ontario  
K1P 5J4

##### **CIDN:**

1290 0200001



### Ongoing Projects/Projets en cours

#### MOISTURE, MOULD, YOUR HOUSE AND YOU PUBLICATION

**Objective:**

Review the backgrounder and other resource materials. Assemble and convene a focus group of possible consumer users, to determine the best format, style and content of the publication. Finalize the audience profile and outline for the publication. Develop and edit the manuscript.

**CMHC Project Officer:**

J. White

**Division:**

Research Division

**Contractor:**

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

**CIDN:**

1030 0200001

#### PROTECTING GYPSUM SHEATHING IN INSULATED STEEL-STUD WALLS

**Objective:**

To determine which types of wall arrangements perform the best with respect to moisture control under similar boundary conditions.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Dr. Kim Pressnail  
Assistant Professor  
Dept. of Civil Engineering  
University of Toronto  
35 St. George Street  
Toronto, Ontario  
M5S 1A4

**CIDN:**

1282 0200001

#### WIND TUNNEL EXPERIMENTS SIMULATING WIND DRIVEN RAIN

**Objective:**

Study the density of rain impact for three common building shapes and with three architectural features that are designed to minimize rain impact on the buildings.

**CMHC Project Officers:**

J. Rousseau; P.-M. Busque

**Division:**

Housing Innovation Division

**Contractor:**

The Boundary Layer Wind  
Tunnel Laboratory  
University of Western Ontario  
Room 271  
Stevenson Lawson Building  
London, Ontario  
N6A 5B8

**CIDN:**

1123 0304001  
1123 0300001

# **MORTGAGES AND HOUSING FINANCE/ HYPOTHÈQUES ET LOGEMENT – FINANCES**

## **Ongoing Projects/Projets en cours**

### **FEASIBILITY STUDY ON METHODOLOGY FOR MEASURING DISCRIMINATION IN RESIDENTIAL MORTGAGE LENDING**

#### **Objective:**

To identify alternative approaches to measuring discrimination in residential mortgage lending, and determine the feasibility of these different methods. Each option must be distinct from the others and be practicably feasible against the backdrop of the critical success factors within the Canadian context.

#### **CMHC Project Officer:**

J. Mugford

#### **Division:**

Strategic Planning and Policy  
Development Division

#### **Contractor:**

Prairie Research  
Associates Inc.  
300-326 Broadway  
Winnipeg, Manitoba  
R3C 0S5

#### **CIDN:**

1352 0100001

### **IMPLEMENTATION OF A NEW MORTGAGE SURVEY OF LENDERS**

#### **Objective:**

To design the final version of the questionnaire and the definition list of the new market survey of lenders; establish the methodology and the format of data to be transferred to the Corporation by the lenders participating in the survey. The final report should include a summary of key findings, recommendations for the transfer of data, and a summary of individual interviews.

#### **CMHC Project Officer:**

M. Pellerin

#### **Division:**

Market Analysis Centre

#### **Contractor:**

Mary McDonough  
Research Associates  
151 Yonge Street  
Suite 1210  
P.O. Box 7  
Toronto, Ontario  
M5C 2W7

#### **CIDN:**

1482 1000001

# **MUNICIPAL GOVERNMENT AND FINANCE/ ADMINISTRATION MUNICIPALE ET FINANCES**

## **Ongoing Projects/Projets en cours**

### **HANDBOOK ON MUNICIPAL ENVIRONMENTAL PRICING**

#### **Objective:**

To produce the ICLEI handbook on municipal environmental pricing which will provide a blueprint for reforming municipal economic instruments.

#### **CMHC Project Officer:**

J. Smugler

#### **Division:**

International Relations  
Division

#### **Contractor:**

International Council for  
Local Environmental  
Initiatives  
City Hall, East Tower  
8th Floor  
Toronto, Ontario  
M5H 2N2

#### **CIDN:**

1252 0900001

### SECOND STAGE HOUSING FOR NATIVE WOMEN: FINAL REPORT.

*Prepared by Native Women's Association of Canada. Prepared for Strategic Planning and Policy Development Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

This report was prepared in order to establish the need for second stage housing for Native women and to attempt to develop a community-based transferable model for shelters across Canada. By conducting interviews and examining existing sociological and historical literature, the researcher came to the main conclusion that abused Native women do in fact have distinct needs when compared to abused non-Native women. The report's conclusion states, "The distinct needs of Native women and their connection to their Native community can only occur in second stage housing that has been planned, implemented and staffed by Natives for Natives".

The type of facility recommended for Native women would be similar to healing lodges which have been established as an alternative to prison for Native inmates. They would utilize traditional spirituality and teachings to help their clients. The report also recommended that shelters be placed within Native communities, that housing units be small and esthetically pleasing to the Native client and the community in which they are located, and that the design reflect Native culture and tradition, utilizing as much open green space and as many circular concepts as possible. Abundant space should be provided for children to run and play, for storage, for fund raising events, traditional dances and ceremonies, therapy sessions and, finally, a place for the Elders to stay during their visits.

### Ongoing Projects/Projets en cours

#### ABORIGINAL HOUSING NEEDS

##### Objective:

To provide a profile of the housing characteristics and needs of aboriginal peoples using data from the 1991 Census and post-censal Aboriginal Peoples Survey (APS).

##### CMHC Project Officer:

J. Angus

##### Division:

Research Division

##### Contractor:

ARK Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

##### CIDN:

1045 0201002

#### ANALYSIS OF MIGRATION AND RESIDENTIAL MOBILITY PATTERNS AMONG CANADA'S ABORIGINAL POPULATION

##### Objective:

To undertake a study examining both the migration and mobility patterns among aboriginal groups. The study will explore the relationship with the urbanization and housing conditions of the aboriginal population.

##### CMHC Project Officer:

D. Chamberland

##### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

##### Contractor:

Royal Commission on  
Aboriginal Peoples  
427 Laurier Avenue, 6th Floor  
P.O. Box 1993, Station "B"  
Ottawa, Ontario  
K1P 1B2

##### CIDN:

1171 0200001



## Ongoing Projects/Projets en cours

### THE HOUSING CRISIS IN CANADA'S INUIT COMMUNITIES

#### Objective:

To conduct research on housing issues relevant to Inuit people.

#### CMHC Project Officer:

A. Wellman

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

Inuit Tapirisat of Canada  
Suite 510  
170 Laurier Avenue West  
Ottawa, Ontario  
K1P 5V5

#### CIDN:

1196 0100001

### HOUSING FOR THE MÉTIS PEOPLE: A NATIONAL STUDY ON THE STATE OF MÉTIS HOUSING

#### Objective:

Examine the state of housing for Métis people in the Métis homeland.

#### CMHC Project Officer:

A. Wellman

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

Métis National Council  
558 Whitewood Crescent  
Saskatoon, Saskatchewan  
S7J 4L1

#### CIDN:

1158 0100001

### INCREASING SELF-SUFFICIENCY: NEW FINANCING AND INVESTMENT OPPORTUNITIES FOR URBAN AND RURAL NATIVE HOUSING AUTHORITIES

#### Objective:

Conduct research on options for new directions in aboriginal housing, and to increase the self-sufficiency of Native housing authorities through new financing and investment opportunities.

#### CMHC Project Officer:

A. Wellman

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

Native Council of Canada  
384 Bank Street, 2nd Floor  
Ottawa, Ontario  
K2P 1V4

#### CIDN:

1203 0100001

### INUIT WOMEN AND HOUSING ISSUES

#### Objective:

To conduct research on housing issues relevant to Inuit women. The results of this research will be translated into Inuktitut, published and distributed throughout the North as a means of promoting public awareness and discussion of the issues.

#### CMHC Project Officer:

A. Wellman

#### Division:

Strategic Planning and Policy Development Division

#### Contractor:

Pauktuutit - Inuit Women's Association  
200 Elgin Street  
Suite 804  
Ottawa, Ontario  
K2P 1L5

#### CIDN:

1180 0100001

### PLANNING OF NATIVE NORTHERN COMMUNITIES

#### Objective:

An evaluation of the level of success of existing planning and housing practice for Native communities in the western portion of the Northwest Territories.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Research Division

#### Contractor:

Gino A. Pin  
Sub Post Office no. 1  
3502 Raccine Road  
Yellowknife, Northwest Territories  
X1A 2S9

#### CIDN:

1462 0200001

**PROJECTIONS OF THE  
ABORIGINAL POPULATION  
IN CANADA - SUMMARY  
REPORT**

**Objective:**

Prepare a summary report based on the main report, "Projections of the Population with Aboriginal Identity in Canada, 1991-2016, prepared by Statistics Canada for the Royal Commission on Aboriginal People.

**CMHC Project Officer:**

J. Angus

**Division:**

Research Division

**Contractor:**

Statistics Canada  
Room 1708  
Main Building  
Tunney's Pasture  
Ottawa, Ontario  
K1A 0T6

**CIDN:**

1511 0200001

## Completed Reports/Rapports terminés

### **FROSTLINE: NORTHERN RESEARCH INTO HOUSING TECHNOLOGY: A PUBLICATION OF THE NoRTH COMMITTEE.**

*Ottawa: Canada Mortgage and Housing Corporation, Housing Innovation Division,  
Winter 1995.*

This issue of FROSTLINE deals with various subjects of relevance for northern Canada such as the Native Housing Awards Symposium, the NoRTH Committee video conference, Canadian housing technology and the Sakha Village Project in Russia, the Winter Cities Conference in Anchorage and construction training in the North. The publication also outlines ventilation changes to appear in the 1995 National Building Code.

NOTE : Aussi disponible en français sous le titre : *Septentrion : recherche en technologie de l'habitation dans le Nord : publication du Comité du NoRD.*

### **SEPTENTRION : RECHERCHE EN TECHNOLOGIE DE L'HABITATION DANS LE NORD : PUBLICATION DU COMITÉ DU NoRD.**

*Ottawa : Société canadienne d'hypothèques et de logement, Division de l'innovation dans l'habitation, hiver 1995.*

Ce numéro de Septentrion traite de divers sujets d'importance pour le Nord canadien tels que le symposium des Prix d'excellence-logement autochtone, la vidéoconférence du Comité du NoRD, la technologie du bâtiment au Canada et le projet Sakha Village en Russie, la conférence des villes d'hiver qui a eu lieu à Anchorage, et la formation en construction dans le Nord. Cette publication donne également un aperçu des changements au code en matière de ventilation qui figureront dans le Code national du bâtiment 1995.

NOTE: Also available in English under the title: *Frostline: Northern Research into Housing Technology: A Publication of the NoRTH Committee.*

## Ongoing Projects/Projets en cours

### **NORTH FILE FACT SHEETS**

#### **Objective:**

To produce fact sheets on northern building technology camera-ready for production.

#### **CMHC Project Officer:**

R. Duncan

#### **Division:**

Housing Innovation Division

#### **Contractor:**

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### **CIDN:**

0515 0300002

### **RENATURALISATION DES SURFACES DECAPÉES AU VOISINAGE DES HABITATIONS DANS LE VILLAGE NORDIQUE DE KUJJUAQ**

#### **Objet:**

De sélectionner les espèces végétales les plus performantes en fonction des conditions locales; de déterminer les modes les plus efficaces de production des plantes; et d'identifier les techniques les plus appropriées de mise en terre des plantes.

#### **Agent de projet pour la SCHL**

M. Macpherson

#### **Division :**

Division de la recherche

#### **Contractant :**

Gilles Houle  
Centre d'études nordiques  
Université Laval  
Cité universitaire  
Québec (Québec)  
G1K 7P4

#### **NIC :**

1457 0200001

## PLAYGROUNDS/JEUX, TERRAINS DE

### Ongoing Projects/Projets en cours

#### UPDATING OF PLAYGROUND PUBLICATIONS AND SLIDE PRESENTATIONS FROM CHILDREN'S ENVIRONMENTS ADVISORY SERVICE

##### Objective:

Updating of playground publications and slides, with revisions in the areas of design, pictures, concepts and overall content to reflect changes in playground design standards and include greater emphasis on barrier-free design and injury prevention.

##### CMHC Project Officer:

P. Archer

##### Division:

Housing Innovation Division

##### Contractor:

Betty Dion Enterprises Ltd.  
458 Melbourne Avenue  
Ottawa, Ontario  
K2A 1W3

##### CIDN:

1114 0300001



## RENTAL HOUSING/LOGEMENT LOCATIF

### Ongoing Projects/Projets en cours

#### **IMPACT D'UN PROGRAMME PARAMUNICIPAL SUR LE MARCHÉ DU LOGEMENT LOCATIF**

**Objet :**

Déterminer si l'intervention  
PALL a eu des impacts sur le  
marché locatif avoisinant.

**Agent de projet pour la SCHL :**

M. Macpherson

**Division :**

Division de la recherche  
Programme de subventions de  
recherche

**Contractant :**

Luba Serge  
29, rue Easton  
Montréal (Québec)  
H4X 1K9

**NIC :**

1287 0200001

#### **THE RESIDUALIZATION OF RENTAL TENURE: IMPLICATIONS FOR HOUSING POLICY**

**Objective:**

Examine how both the rental  
housing stock and the profile  
of rental tenants has changed  
over the past 2 decades from  
1971-91; explore how the  
changing tenant profile is  
perceived by private rental  
landlords; and determine if  
this change is significant in  
influencing the decisions of  
private rental landlords to  
disinvest in rental housing.  
The emphasis is not on the  
feasibility of new rental  
construction but on trans-  
actions in the existing rental  
stock.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Stephen P. Pomeroy  
Focus Consulting  
40 Java Street  
Ottawa, Ontario  
K1Y 3L3

**CIDN:**

1463 0200001

### Ongoing Projects/Projets en cours

#### BACKGROUND PAPER ON ALTERNATIVE DEVELOPMENT STANDARDS AND MECHANICAL SYSTEMS

##### Objective:

Prepare a research report entitled "Background Paper on Alternative Development Standards" which will document progress made to date on local and regional alternative development standards in Canada and the U.S. and discuss future research and policy requirements in this area.

##### CMHC Project Officer:

D. D'Amour

##### Division:

Research Division

##### Contractor:

Berridge Lewinberg Greenberg  
111 Queen Street East  
Suite 200  
Toronto, Ontario  
M5C 1S2

##### CIDN:

1438 0200001  
1438 0201001

## RESIDENTIAL REHABILITATION/ RÉNOVATION DE LOGEMENTS

### Completed Reports/Rapports terminés

#### THE RENOVATION EXPRESS.

*Ottawa: Natural Resources Canada in cooperation with Canada Mortgage and Housing Corporation, Spring 1995.*

In this issue of Renovation Express, a consumer-directed newspaper, the articles cover typical renovation jobs like adding new exterior siding or windows. Homeowners learn how to take action against air leaks, deal with contractors and make penny-wise renovations. In addition, Jon Eakes, the House Doctor, helps a couple sort out their re-siding options, watches a group of six very bright children educate their father on energy-efficient hot water use, solves a tricky ceiling renovation problem and helps homeowners make the most out of their new addition.

NOTE : Aussi disponible en français sous le titre : *Rénovation Express*.

#### RÉNOVATION EXPRESS.

*Ottawa : Ressources naturelles Canada en collaboration avec la Société canadienne d'hypothèques et de logement, printemps 1995.*

Dans ce numéro de Rénovation Express, les articles portent sur divers travaux de rénovation courants, comme la pose de fenêtres ou d'un revêtement extérieur neuf. On y apprend comment agir contre les fuites d'air, s'y prendre avec les entrepreneurs et faire des rénovations économiques. De plus, Jon Eakes, alias Dr. Maison, ausculte le revêtement extérieur d'une maison et discute des traitements possibles, observe six enfants brillants qui font la leçon à leur père au sujet des économies d'eau chaude, sauve d'une mort incertaine un plafond cathédrale et engage les constructeurs d'une rallonge sur la voie d'un prompt rétablissement.

NOTE: Also available in English under the title: *Renovation Express*.

#### REPORT ON THE RED DEER, ALBERTA, RENOVATION DEMONSTRATION: RED DEER PROJECT '94.

*Prepared by Will Mayhew, Howell-Mayhew Engineering, Inc. and Oliver Drerup, Drerup-Armstrong Ltd. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

A partnership among Canada Mortgage and Housing Corporation, Natural Resources Canada and the Canadian Home Builders' Association (CHBA) was formed for the purposes of creating a renovation demonstration project. The house chosen for this renovation was a two-storey, single family dwelling located in a modest area in Red Deer, Alberta. The renovation was carried out during the summer of 1994, by the local chapter of CHBA, the Red Deer Home Builders' Association. The guiding philosophy of the project was to demonstrate environmental responsibility, energy efficiency and healthy housing through material selection, recycling, increased insulation, airtightness, ventilation and moisture control. This report outlines the Red Deer project and presents an overview of the project objectives, team organization, the renovation itself, monitoring, and an assessment of the project by those who were involved.

## ASSESSMENT REPAIR STRATEGY FOR EXISTING BUILDINGS CONSTRUCTED WITH MASONRY VENEER STEEL STUD WALLS

### Objective:

To develop an overall assessment strategy for determining the extent of repairs required for existing buildings constructed with brick veneer steel stud systems.

### CMHC Project Officer:

J. Rousseau

### Division:

Housing Innovation Division

### Contractor:

T.W.J. Trestain  
573 Durie Street  
Toronto, Ontario  
M6S 3H2

### CIDN:

0937 0300001

## HOMEOWNER MOTIVATION AND INNER CITY REVITALIZATION: AN EXAMINATION OF RELATED FACTORS IN WINNIPEG

### Objective:

To carry out an examination of homeowner motivation and inner city revitalization; to identify three inner city areas for analysis in the City of Winnipeg, selected on the basis of high levels of renovation activity.

### CMHC Project Officer:

M. Macpherson

### Division:

Research Division  
External Research Program

### Contractor:

Christine D. McKee  
City Planning Department  
University of Manitoba  
Faculty of Architecture  
201 Russell Building  
Winnipeg, Manitoba  
R3T 2N2

### CIDN:

1277 0200001

## LOCAL INDICATORS OF RENOVATION SPENDING

### Objective:

To carry out a study of local indicators of renovation spending; determine the reliability of current measures of renovation activity at the CMA level; make recommendations for the construction of comprehensive, reliable and timely indicators of renovation activity, and develop the indicators for selected CMAs.

### CMHC Project Officer:

G. Proulx

### Division:

Market Analysis Centre

### Contractor:

Clayton Research Associates  
Limited  
1580 Kingston Road  
Scarborough, Ontario  
M1N 1S2

### CIDN:

1234 1000001

## MASONRY VENEER STEEL STUD RENOVATION STRATEGIES

### Objective:

To evaluate different retrofit brick ties for repairing existing brick veneer/steel stud systems.

### CMHC Project Officer:

J. Rousseau

### Division:

Housing Innovation Division

### Contractor:

University of Waterloo  
Building Engineering Group  
Waterloo, Ontario  
N2L 3G1

### CIDN:

0787 0300001

## PREPARE GUIDELINES FOR THE APPLICATION OF THE NATIONAL BUILDING CODE IN RENOVATION WORK

### Objective:

To carry out a project to prepare guidelines for the application of the National Building code in renovation work.

### CMHC Project Officers:

J. Rousseau, K. Rauch

### Division:

Professional Services and  
Standards Division

### Contractor:

A.T. Hansen Consulting  
Services  
702 Roanoke Street  
Ottawa, Ontario  
K1K 2G4

### CIDN:

1327 0300001



## SEWAGE DISPOSAL/EAUX USÉES

### Ongoing Projects/Projets en cours

#### **FACULTATIVE TREATMENT SYSTEM**

**Objective:**

To develop, install and test a facultative treatment non-mechanical sewage treatment system for household waste.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
Housing Technology  
Incentives Program

**Contractor:**

Denis Barker & Associates Ltd.  
3930 Quadra Street  
Victoria, British Columbia  
V8X 1J4

**CIDN:**

1499 0200001

#### **IMPROVEMENTS IN ON-SITE WASTEWATER TREATMENT**

**Objective:**

To evaluate the performance of household water conservation, in association with an innovative technology for septic tank effluent treatment and nitrogen removal, to provide more cost-effective and reliable on-site wastewater treatment.

**CMHC Project Officer:**

A. Houston

**Division:**

Research Division

**Contractor:**

Technical University of Nova Scotia  
Centre for Water Resources Studies  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1047 0200001

#### **LOWER COST ALTERNATIVE FOR MUNICIPAL SEWER INSPECTION AND MAINTENANCE**

**Objective:**

To reduce subdivision servicing costs by the design, development and testing of a technically sound and innovative structure to replace, at a lower cost, the conventional manhole.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Butler Krebs & Associates Inc.  
8616 - 51 Avenue  
Suite 210  
Edmonton, Alberta  
T6E 6E6

**CIDN:**

1274 0200001

#### **A NEW PROCEDURE FOR EVALUATING THE PERFORMANCE OF ON-SITE SYSTEMS**

**Objective:**

To assess the value of the leachfield evaluation test; a method for assessing the hydraulic performance of an on-site sewage disposal system.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Dr. Donald H. Waller  
Technical University of Nova Scotia  
Centre for Water Resources Studies  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1289 0200001

### ANALYSIS OF THE RELATIVE COST AND EFFECTIVENESS OF SELECTED SOCIAL RENTAL HOUSING PROGRAMS

#### Objective:

To assess the effectiveness of selected rental housing programs in addressing the problems of affordability, adequate supply, and housing quality. The study will determine how traditional non-profit supply programs and shelter allowances perform, over time under different market conditions.

#### CMHC Project Officer:

J. Beaupré

#### Division:

Senior Vice-President's Office  
Policy, Research and Communications

#### Contractor:

Canadian Housing and  
Renewal Association  
251 Laurier Avenue West  
Suite 304  
Ottawa, Ontario  
K1P 5J6

#### CIDN:

1351 0600001

### CASE STUDIES OF COMMUNITY IMPACTS FOR THE EVALUATION OF THE URBAN SOCIAL HOUSING PROGRAMS

#### Objective:

Case studies of community impacts for the evaluation of the urban social housing programs.

#### CMHC Project Officer:

P. Streich

#### Division:

Program Evaluation Division

#### Contractor:

SPR Associates Incorporated  
2 Carleton Street  
Suite 804  
Toronto, Ontario  
M5B 1J3

#### CIDN:

1008 0501010

### DEMONSTRATION STUDY OF RESIDENT PARTICIPATION IN THE FLEMINGDON PARK COMMUNITY

#### Objective:

To carry out a demonstration study of resident participation in the Flemingdon Park Community.

#### CMHC Project Officer:

P. Brown

#### Division:

Strategic Planning and Policy  
Development Division

#### Contractor:

Partners in Equality  
17 Yarmouth Gardens  
Toronto, Ontario  
M6G 1W3

#### CIDN:

1195 0100001

### DEVELOPMENT OF INDICATORS OF QUALITY OF LIFE, HEALTH AND WELL-BEING IN CANADIAN SOCIAL HOUSING: IDENTIFICATION OF INDICATORS OF HEALTH PROMOTING SOCIAL HOUSING SETTINGS

#### Objective:

To develop indicators of health and well-being which would apply to social housing and could be used by CMHC for research, policy analysis and program evaluation.

#### CMHC Project Officer:

D. Chamberland

#### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

#### Contractor:

Veronica Doyle  
1317 Richardson Street  
Victoria, British Columbia  
V8S 1P6

#### CIDN:

1023 0200003

### EVALUATION OF THE URBAN SOCIAL HOUSING PROGRAMS

#### Objective:

To record data from selected fields of a number of survey forms and to prepare electronic data files from the recorded data elements.

#### CMHC Project Officer:

C. Wilson

#### Division:

Program Evaluation Division

#### Contractor:

ISM Information Systems  
Management  
Box 201  
1200 St. Laurent Boulevard  
Ottawa, Ontario  
K1K 3B8

#### CIDN:

1008 0501009

## SOCIAL HOUSING/LOGEMENT SOCIAL

### Ongoing Projects/Projets en cours

#### NATIONAL ENABLEMENT DEMONSTRATION INITIATIVE

**Objective:**

To undertake the development and coordination of a national enablement demonstration initiative to teach social housing groups the skills and techniques to use in order to develop self-help housing strategies.

**CMHC Project Officer:**

J. Burr

**Division:**

Programs Sector

**Contractor:**

Canadian Housing and  
Renewal Association  
251 Laurier Avenue West  
Suite 401  
Ottawa, Ontario  
K1P 5J6

**CIDN:**

1436 1500001

#### 1995 EXPERTS ROUND TABLE - INDICATORS OF QUALITY OF LIFE, HEALTH AND WELL-BEING IN ASSISTED HOUSING

**Objective:**

To participate in a one-day round table of American and Canadian experts at HUD in Washington to discuss the development by HUD/CMHC of indicators and measures of quality of life, health and well-being for application in assisted housing environments.

**CMHC Project Officer:**

S. Mockler

**Division:**

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

**Contractors:**

B.C. Ministry of Housing  
Recreation & Consumer  
Services  
1019 Wharf Street  
Victoria, British Columbia  
V8V 1X4

Institute of Urban Studies  
University of Winnipeg  
515 Portage Avenue  
Winnipeg, Manitoba  
R3B 2E9

Dr. Ian McDowell  
1467 Rhea Place  
Gloucester, Ontario  
K1G 3N3

Dr. William R. Avison  
University of Western Ontario  
3rd Floor E.S. Bldg.  
Centre for Health and  
Well-Being  
London, Ontario  
N6A 5B9

**CIDN:**

1416 0200004  
1416 0200001  
1416 0200002  
1416 0200003

#### PROTOCOLE DE RECHERCHE POUR ÉVALUER LE RÔLE DU LOGEMENT SOCIAL AVEC SUPPORT COMMUNAUTAIRE

**Objet :**

De développer un protocole de recherche pour évaluer le rôle du logement social avec support communautaire sur l'amélioration des conditions de vie dans un processus continu d'intégration sociale pour les personnes seules, à faible revenu et à risque de marginalisation.

**Agent de projet pour la SCHL :**

J. Taggart

**Division :**

Division de l'élaboration de propositions

**Contractant :**

La Fédération des OSBL  
d'habitation de Montréal  
1650, rue St-Timothée  
Suite 206  
Montréal (Québec)  
H2L 3P1

**NIC :**

1471 0100001



# SUSTAINABLE DEVELOPMENT/ DÉVELOPPEMENT DURABLE

## Completed Reports/Rapports terminés

### OPPORTUNITIES FOR ACCELERATING IMPLEMENTATION OF ENVIRONMENTALLY SUSTAINABLE HIGH-PERFORMANCE HOUSING.

*Prepared by Robert J. Booth and Peter S. Kettenbeil. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

Five innovations from recent Canadian housing demonstration programs were selected for their potential to make significant contributions to environmentally sustainable, high-performance housing. Opportunities for accelerating implementation of these innovations were identified by determining ways to capitalize on opportunities, and ways to overcome obstacles for each innovation. The five innovations were: integrated ground source heat pump systems, integrated high-efficiency gas hot water heaters, super windows, water purification systems, and comprehensive landscaping.

Information overload appears to be the single, most important obstacle to the implementation of energy-efficient innovations. There is a very real need to reduce the quantity of documentation and to increase the quality of technical information. The advantages and cost benefits of innovations have not been clearly identified to consumers; in many cases, the performance and benefits are not yet known. Purchasing decisions are often delayed by confusion about the best approach to be taken for long-term benefits.

The report identifies several key ways to accelerate the adoption of the innovations mentioned above. The effective distribution of simple, clear and authoritative literature on the economic benefits of implementing various home improvement options is recommended. The high purchase price of most energy-related environmental products can be overcome with term financing from utilities and product suppliers. As monthly energy usage is reduced, these innovations can literally pay for themselves. Performance warranties from manufacturer associations would also reduce performance concerns.

## Ongoing Projects/Projets en cours

### CMHC COLLABORATION WITH FCM CONCERNING THE OECD PROJECT GROUP ON THE ECOLOGICAL CITY

#### Objective:

To produce a draft national overview paper and undertake other activities to represent Canada in relation to the project of the Organization for Economic Cooperation and Development (OECD) entitled "The Ecological City".

#### CMHC Project Officer:

P. Spurr

#### Division:

International Relations  
Division

#### Contractor:

Federation of Canadian  
Municipalities  
24 Clarence Street  
Ottawa, Ontario  
K1N 5P3

#### CIDN:

1313 0900001



## SUSTAINABLE DEVELOPMENT/ DÉVELOPPEMENT DURABLE

### Ongoing Projects/Projets en cours

#### DEVELOPMENT OF COMMUNITY-BASED SOCIAL MARKETING APPROACHES FOR ACHIEVING SUSTAINABILITY

**Objective:**

Accelerate the shift towards sustainability through design, testing and refining of six community-based social marketing campaigns promoting healthier housing and communities, sustainable use of renewable resources, reduced air and water pollution, reduced waste disposal and reduced climate change problems.

**CMHC Project Officer:**

J. Robar

**Division:**

Research Division

**Contractor:**

Supply and Services Canada  
Environmental Innovation  
Program  
1201, Phase III  
Place du Portage  
Hull (Québec)  
K1A 0S5

**CIDN:**

1497 0200001

#### MEASURING URBAN SUSTAINABILITY

**Objective:**

To advance conceptual development, to develop guidelines and criteria, to exchange information and findings and to develop a proceedings report on urban sustainability indicators.

**CMHC Project Officer:**

D. Leong

**Division:**

Research Division

**Contractor:**

Lura Group  
3 Church Street  
Suite 400  
Toronto, Ontario  
M5E 1M2

**CIDN:**

1447 0200002

#### HEALTHY HOUSING DEMONSTRATION

**Objective:**

The construction of a demonstration autonomous house in Toronto in general accordance with the winning housing design in CMHC's healthy housing design competition.

**CMHC Project Officer:**

J. Robar

**Division:**

Research Division

**Contractor:**

Liefhebber, Martin Architect  
Inc.  
177 First Avenue  
Toronto, Ontario  
M4M 1X3

**CIDN:**

0779 0202003

#### PERFORMANCE MONITORING OF THE VANCOUVER HEALTHY HOUSE

**Objective:**

To monitor and analyze the performance (energy usage, water consumption and indoor air quality) of CMHC's Vancouver Healthy House.

**CMHC Project Officer:**

C. Ives

**Division:**

Research Division

**Contractor:**

SAR Engineering Ltd.  
8884-15th Avenue  
Burnaby, British Columbia  
V3N 1Y3

**CIDN:**

0779 0203018

#### SUSTAINABLE LANDSCAPE DESIGN FOR RESIDENTIAL DEVELOPMENTS

**Objective:**

To highlight the link between sustainable development for housing with the condition, composition and use of native vegetation.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division

**Contractor:**

Vagelatos Associates  
Landscape Architecture Ltd.  
207-2211 West 4th Avenue  
Vancouver, British Columbia  
V6K 4S2

**CIDN:**

1466 0200001

**TESTING CONSUMER  
RECEPTIVITY TO  
SUSTAINABLE AND MORE  
AFFORDABLE SUBURB  
DESIGN IN CALGARY**

**Objective:**

To address the question:  
are Canadian consumers  
(houseseekers, homebuyers)  
receptive to residential  
community design that  
incorporates sustainable  
development principles and  
performance characteristics?

**CMHC Project Officer:**

F. Grammenos

**Division:**

Research Division  
External Research Program

**Contractor:**

William T. Perks  
Faculty of  
Environmental Design  
Calgary University  
2500 University Drive, N.W.  
Earth Sciences  
Calgary, Alberta  
T2N 1N4

**CIDN:**

1278 0200001

### Ongoing Projects/Projets en cours

#### LES ENSEMBLES RÉSIDENTIELS ET LA SÉCURITÉ ROUTIÈRE

##### Objet :

La présente recherche porte sur l'étude des rapports entre la forme des milieux résidentiels et la sécurité des déplacements des différents usagers de la route.

##### Agent de projet pour la SCHL :

M. Macpherson

##### Division :

Division de la recherche  
Programme de subventions de recherche

##### Contractant :

Denise Piché  
École d'architecture  
Université Laval  
Québec (Québec)  
G1K 7P4

##### NIC :

0925 0200001

#### PAYSAGES DE L'INTÉRIEUR DANS L'ÎLE DE MONTRÉAL

##### Objet :

Cette étude part de la prémisse que le paysage public montréalais a été principalement conçu à partir de courants de pensées externes certains étant bien connus, identifiés et documentés, mais que par contre on ne sait presque rien sur le sens qu'accordent des Montréalais à leur paysage à travers leurs propres interventions et commandes paysagères.

##### Agent de projet pour la SCHL :

M. Macpherson

##### Division :

Division de la recherche  
Programme de subventions de recherche

##### Contractant :

Madame Danièle Routaboule  
École d'Architecture de  
Paysage  
Université de Montréal  
5620, rue Darlington  
Montréal (Québec)  
H3C 3J7

##### NIC :

1284 0200001

#### PRESENTATION AT THE OECD CONFERENCE, INDICATORS FOR URBAN POLICIES - RENNES, FRANCE

##### Objective:

To prepare and deliver a presentation on the innovative experience of the contractor with urban indicators, at the international conference entitled Indicators for Urban Policies, April 3-4, Rennes, France.

##### CMHC Project Officer:

P. Spurr

##### Division:

International Relations  
Division

##### Contractor:

Regional Municipality of  
Hamilton-Wentworth  
119 King Street, West  
15th Floor  
Hamilton, Ontario  
L8N 3V9

##### CIDN:

1077 0900001

#### QUALITY OF LIFE IN THE GREATER TORONTO AREA

##### Objective:

To develop, test and document a methodology to collect attitudinal or subjective data as part of a broader study on quality of life in the greater Toronto area. The indicators developed and tested as part of this research project will complement the existing objective indicators of municipal quality of life in CMHC's COMLE model, which is available to municipalities and community groups across Canada.

##### CMHC Project Officer:

D. Chamberland

##### Division:

Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

##### Contractor:

Ministry of Municipal Affairs  
777 Bay Street  
Toronto, Ontario  
M5G 2E5

##### CIDN:

1470 0200001

### HARMONIZATION OF VENTING TERMINOLOGY: A REPORT.

*Prepared by Buchan, Lawton, Parent Ltd. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

At present, a host of venting terms are utilized in various Canadian and American codes and standards. In some cases, a different term is used by different organizations to describe the same component, system, or process. In other cases, there have been problems in discriminating between the venting of combustion gases and the ventilation of spaces. This inconsistency in venting terminology has prompted Canada Mortgage and Housing Corporation to proceed with a project aimed at harmonizing venting technology. This report identifies all relevant terms and definitions used in venting codes and standards and develops a list of recommended common definitions for one hundred and twenty-four terms which could be used by all organizations that define requirements on the removal of combustion products from buildings.

### Ongoing Projects/Projets en cours

#### COMPLYING WITH RESIDENTIAL VENTILATION REQUIREMENTS IN THE 1990 NATIONAL BUILDING CODE

##### Objective:

To revise and update CMHC's existing "Complying with Residential Ventilation Requirements in the 1990 National Building Code" to meet the 1995 NBC ventilation requirements.

##### CMHC Project Officer:

T. Marshall

##### Division:

Housing Innovation Division

##### Contractor:

Unies Ltd.  
1666 Dublin Avenue  
Winnipeg, Manitoba  
R3H 0H1

##### IDN:

1413 0300002  
1413 0301001

#### DEVELOPMENT OF EFFICIENCY IMPROVEMENT TIMELINESS FOR RESIDENTIAL VENTILATION EQUIPMENT

##### Objective:

To assemble information on residential mechanical ventilation equipment (fans, blowers, heat exchangers), and to develop a consensus on how quickly the efficiency of these devices can and should be improved over the next decade.

##### CMHC Project Officer:

J. White

##### Division:

Research Division

##### Contractor:

Buchan Lawton Parent Ltd.  
5370 Canotek Road  
Ottawa, Ontario  
K1J 8X7

##### CIDN:

1242 0200001

#### FIELD STUDY OF OCCUPANT INTERACTIONS AND VENTILATION EFFECTIVE- NESS OF HEAT RECOVERY VENTILATION SYSTEMS

##### Objective:

To conduct a field study of occupant interactions and ventilation effectiveness of heat recovery ventilation systems.

##### CMHC Project Officer:

D. Hill

##### Division:

Research Division  
Panel on Energy R & D

##### Contractor:

Buchan Lawton Parent Ltd.  
Suite 210  
30 East Beaver Creek  
Richmond Hill, Ontario  
L4B 1G6

##### CIDN:

1376 0800001  
1376 0200001



## Ongoing Projects/Projets en cours

### HVAC DESIGN AND INSTALLATION PRACTICES IN MID AND HIGH-RISE BUILDINGS

**Objective:**

To conduct a study to evaluate the changes required to existing HVAC design and installation practices in mid and high-rise buildings in order to ensure compliance with the 1995 National Building and Energy Codes and to study the performance of ventilation systems within these types of buildings.

**CMHC Project Officer:**

D. Hill

**Division:**

Research Division

**Contractor:**

Sheltair Scientific Ltd.  
#2 - 3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

**CIDN:**

1424 0200001

### OPTIMIZE RESIDENTIAL HVAC DUCTWORK SYSTEMS

**Objective:**

To conduct a study to assess the potential to optimize residential HVAC ductwork systems.

**CMHC Project Officer:**

D. Hill

**Division:**

Research Division

**Contractor:**

Allen Associates  
400 Mount Pleasant Road  
Suite 5  
Toronto, Ontario  
M4S 2L6

**CIDN:**

1431 0200001

### PRESSURE MODERATED SCREENED WALL SYSTEMS

**Objective:**

To study the mechanics involved and to attempt to quantify the number, nature and location of vents in the exterior screen of per walls for optimum ventilation drying and pressure moderation; to measure the extent and mechanism of ventilation drying in an idealized per wall; and to measure the extent and mechanism of pressure moderation in an idealized per wall.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
External Research Program

**Contractor:**

Eric F.P. Burnett  
University of Waterloo  
Waterloo, Ontario  
N2L 3G1

**CIDN:**

1273 0200001

### SCIENTIFIC RESEARCH AND DEVELOPMENT CONCERNING VENTILATION SYSTEMS FOR NEW AND EXISTING HOUSES WITH ELECTRIC BASEBOARD HEATING

**Objective:**

To identify designs of simple ventilation air distribution systems that are suitable for new and existing houses that lack fully ducted forced-air heating systems.

**CMHC Project Officer:**

D. Hill

**Division:**

Research Division

**Contractor:**

National Research Council  
Institute for Research in  
Construction  
Building M-20  
Ottawa, Ontario  
K1A 0R6

**CIDN:**

1124 0800001

### TEST-RIG FOR EVALUATING RESIDENTIAL MOTOR-FAN SET PERFORMANCE

**Objective:**

Development and testing of a device for testing the performance of residential ventilating equipment.

**CMHC Project Officer:**

J. White

**Division:**

Research Division  
Panel on Energy R & D

**Contractor:**

Sheltair Scientific Ltd.  
2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

**CIDN:**

1368 0800001  
1368 0200001

**TESTING EQUIPMENT FOR  
CONFIRMATION OF AIR  
TIGHTNESS IN AIR  
BARRIERS**

**Objective:**

To develop and test a working  
prototype chamber air  
leakage detection device.

**CMHC Project Officer:**

P.-M. Busque

**Division:**

Research Division  
Housing Technology  
Incentives Program

**Contractor:**

Retro-Specs Limited  
108 Paramount Road  
Winnipeg, Manitoba  
R2X 2W3

**CIDN:**

1503 0200001

**VENTILATION CONTROL IN  
MEDIUM AIRTIGHTNESS  
HOUSES**

**Objective:**

To investigate the variation of  
pollutant source strengths in  
20 medium airtightness  
houses; to compare the  
ventilation rates of these  
houses to those proposed in  
the 1995 National Building  
Code; to check the effective-  
ness of ventilation system  
control through the use of an  
outdoor temperature sensor.

**CMHC Project Officer:**

D. Fugler

**Division:**

Research Division  
Panel on Energy Research  
and Development

**Contractor:**

Saskatchewan Research  
Council  
Building Science Division  
15 Innovation Boulevard  
Saskatoon, Saskatchewan  
S7N 2X8

**CIDN:**

1179 0800001  
1179 0200001

## WATER CONSERVATION/EAU – CONSERVATION

### Ongoing Projects/Projets en cours

#### DEVELOPMENT OF A RESIDENTIAL WATER USE MODEL

**Objective:**

To carry out the development of a residential water use model.

**CMHC Project Officer:**

P. Russell

**Division:**

Research Division  
Panel on Energy R & D

**Contractor:**

Centre for Water Resources  
Studies  
Technical University of  
Nova Scotia  
P.O. Box 1000  
1360 Barrington Street  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1422 0200002  
1422 0800001

#### HIGH FREQUENCY WATER SHUT OFF CONTROL

**Objective:**

Develop a working prototype of the high frequency water shut off control unit.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Research Division  
Housing Technology  
Incentives Program

**Contractor:**

Victor J. Diduck  
755 Kyle Drive  
Kamloops, British Columbia  
V2B 7J5

**CIDN:**

1265 0200001

#### REVIEW OF WATER SYSTEMS DESIGN AND WASTEWATER TREATMENT TECHNOLOGY FOR CMHC'S TORONTO HEALTHY HOUSE

**Objective:**

To provide specialist advice to the team for CMHC's Toronto Healthy House regarding system design, development and equipment selection for drinking water, recycled water, and wastewater treatment streams, that will work safely and reliably.

**CMHC Project Officer:**

C. Ives

**Division:**

Research Division

**Contractor:**

Al Townsend  
RR no. 1  
Athens, Ontario  
K0E 1B0

**CIDN:**

0779 0207004

#### **GUIDE TECHNIQUE POUR LA CONCEPTION, LA POSE ET L'UTILISATION DES LANTERNEAUX**

**Objet :**

Élaborer un guide pour la  
conception, la pose et  
l'utilisation des lanterneaux.

**Agent de projet pour la SCHL :**

T. Marshall

**Division :**

Division de l'innovation dans  
l'habitation

**Contractant :**

Association provinciale des  
constructeurs d'habitation du  
Québec Inc.  
5930 Boul. L.H. Lafontaine  
Anjou (Québec)  
H1M 1S7

**NIC :**

1432 0300001

#### **MEASUREMENT OF SPECTRAL TRANSMITTANCE OF REPRESENTATIVE GLAZING SAMPLES**

**Objective:**

To obtain the spectral  
transmittance data of a  
representative group of  
window glazings including  
two-pane and three-pane  
assemblies with and without  
low-emissivity coatings; to  
present the data in a manner  
that would allow comparisons  
of the spectral characteristics  
of the window assemblies.

**CMHC Project Officer:**

V. Salares

**Division:**

Research Division

**Contractor:**

University of Calgary  
Centre for Livable  
Communities  
2500 University Drive N.W.  
Calgary, Alberta  
T2N 0G3

**CIDN:**

1214 1100004

#### **A SURVEY OF HEALTH EFFECTS OF LOW-E WINDOWS**

**Objective:**

To determine if there is any  
existing evidence of a possible  
health impact of low-e  
windows on people.

**CMHC Project Officer:**

V. Salares

**Division:**

Research Division

**Contractor:**

Murray Waldman  
Suite 1200  
191 Lombard Avenue  
Winnipeg, Manitoba  
R3B 0X1

**CIDN:**

1214 1100002



## Completed Reports/Rapports terminés

### CANADIAN WOMEN AND CITIES.

*Prepared by Caroline Andrew, Penny Gurstein, Fran Klodawsky ... et al. Prepared for International Relations Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

This document puts forward a Canadian position on the OECD proposal to hold a conference on Women and the City. The paper is based on the idea that Canada will best be able to contribute to this conference by describing its "best practices" in a limited number of areas of particular innovation. The central focus of the document is, therefore, a brief description of existing practices in three areas: women's housing as a continuum, urban safety, and the use of human rights legislation to expand women's accessibility to urban services and facilities.

The first section of the paper describes the context within which these "best practices" were developed in Canada. This contextual material is of two kinds: statistical material relating to women in Canada and a description of the social and political context for urban policy-making. The paper also looks to the future by thinking about the ways in which current research is leading women to reconceptualize the city. In addition to describing the three areas of Canadian best practice, ten specific case studies relating to these three areas are proposed.

### Ongoing Projects/Projets en cours

#### INVESTIGATION OF ISSUES FOR THE EVALUATION OF THE NEXT STEP PROGRAM

##### Objective:

Review all relevant reports and studies in the field of shelters to assist women from violent situations, with special emphasis on studies related to longer-term, second-stage housing approaches. The study will consider relevant information from Canada, the U.S., Australia, the U.K. and any other international experience.

##### CMHC Project Officer:

P. Streich

##### Division:

Program Evaluation Division

##### Contractor:

Janet McClain  
4C View Avenue  
P.O. Box 1166  
Wolfview, New Brunswick  
B0P 1X0

##### CIDN:

1008 0501006

#### INVESTIGATION OF ISSUES FOR THE EVALUATION OF THE NEXT STEP PROGRAM

##### Objective:

To develop a description of the Next Step Program and the projects funded under the 1991-1995 Next Step Program.

##### CMHC Project Officer:

P. Streich

##### Division:

Program Evaluation Division

##### Contractor:

SPR Associates Inc.  
2 Carleton Street  
Suite 804  
Toronto, Ontario  
M5B 1J3

##### CIDN:

1008 0501008

#### INVESTIGATION OF ISSUES FOR THE EVALUATION OF THE NEXT STEP PROGRAM

##### Objective:

To investigate the concept of second-stage housing from an operational perspective, and discuss the essential attributes of this type of housing which could be addressed in the evaluation of CMHC's Next Step Program.

##### CMHC Project Officer:

P. Streich

##### Division:

Program Evaluation Division

##### Contractor:

Susan Nelson  
NHL Consulting Group  
P.O. Box 465  
Lantzville, British Columbia  
V0R 2H0

##### CIDN:

1008 0501007

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# HOUSING RESEARCH QUARTERLY

# RECHERCHE EN LOGEMENT - RAPPORT TRIMESTRIEL

Volume 2  
Number 4  
1995

Volume 2  
Numéro 4  
1995





**HOUSING  
RESEARCH  
QUARTERLY**

**RECHERCHE  
EN LOGEMENT -  
RAPPORT  
TRIMESTRIEL**



Volume 2  
Number 4  
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1995



## INTRODUCTION/INTRODUCTION

Under Part IX of the National Housing Act the Government of Canada provides funds to Canada Mortgage and Housing Corporation to conduct research into the social, economic and technical aspects of housing and related fields.

*Housing Research Quarterly* is compiled and produced on a quarterly basis by the Canadian Housing Information Centre. This publication provides information and access to research which is undertaken and sponsored by the Corporation.

The publication contains information on completed research reports, new publications, videos and bibliographies, as well as ongoing research projects. An alphabetical title index of items listed is included at the end for quick reference.

“Ongoing Projects” refer to research projects which are currently underway. No reports are yet available. Once the project is completed, and a report is available for distribution, it will be listed in *Housing Research Quarterly* under the “Completed Reports” area with a full bibliographic citation and abstract. The “Ongoing Projects” sections of *Housing Research Quarterly* contain the following information:

**Title:**

Title of the project, which may not necessarily be the same as the final report.

**Objective:**

Gives a brief description of the project.

**CMHC Project Officer:**

Individual within CMHC who is managing the project.

**Division:**

Division within CMHC which is managing the project.

**Contractor:**

Individual or firm undertaking the research.

**CIDN:**

Contract Identification Number.

En vertu de la Partie IX de la loi nationale sur l'habitation le gouvernement du Canada fournit des fonds à la Société canadienne d'hypothèques et de logement pour la recherche sur les aspects sociaux, économiques et techniques du logement et des domaines connexes.

*Recherche en logement-rapport trimestriel* est produit chaque trimestre par le Centre canadien de documentation sur l'habitation. Il contient des renseignements sur la recherche entreprise et subventionnée par la Société.

La publication présente des renseignements sur les rapports de recherche, les nouvelles publications, les vidéos et les bibliographies, ainsi que sur les projets de recherche en cours. Une liste alphabétique par titres, facile à consulter, se trouve à la fin de l'ouvrage.

Tous les projets non terminés, n'ayant pas encore fait l'objet d'un rapport sont des «projets en cours». Une fois qu'il sera terminé, publié et disponible, le rapport figurera dans la publication *Recherche en logement-rapport trimestriel* sous la rubrique «Rapports terminés» avec références bibliographiques et sommaire. Les sections «Projets en cours» de *Recherche en logement-rapport trimestriel* contiennent les renseignements suivants :

**Titre :**

Titre du projet, qui n'est pas nécessairement le même que celui du rapport final.

**Objet :**

Brève description du projet.

**Agent de projet pour la SCHL :**

Personne au service de la Société qui gère le projet.

**Division :**

Division de la SCHL chargée de gérer le projet.

**Contractant :**

Personne ou firme chargée de la recherche.

**NIC :**

Numéro d'identification du contrat.





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### QUALIFICATION DU DEGRÉ DE CONFORT ACOUSTIQUE PROCURÉ PAR LES IMMEUBLES MULTILOGEMENTS

#### Objet :

L'objectif de la recherche est de doter l'industrie de la construction d'un outil fiable d'évaluation du degré de confort acoustique d'un logement. Ceci peut-être accompli en regroupant les connaissances acquises lors de projets de recherche précédents sous forme d'objectifs d'isolation sonore et en élaborant un protocole d'évaluation préliminaire.

#### Agent de projet pour la SCHL :

M. Desbiens

#### Division :

Division des politiques et  
de la recherche en matière  
socio-économique  
Programme de subventions  
de recherche

#### Contractant :

Michel Morin  
MJM Conseillers en  
Acoustique Inc.  
6555, chemin  
Côte-des-Neiges  
Bureau 440  
Montréal (Québec)  
H3S 2A6

#### NIC :

1461 0200001



## ATTICS/GRENIERS

### Ongoing Projects/Projets en cours

#### **DEMONSTRATION OF IMPROVED ATTIC VENTILATION AND MOISTURE CONTROL STRATEGIES**

##### **Objective:**

Test unconventional attic ventilation strategies in both new and existing houses. Use the existing attic computer program to help select which venting strategy will work best.

##### **CMHC Project Officer:**

D. Fugler

##### **Division:**

Technical Policy and  
Research Division

##### **Contractor:**

Sheltair Scientific Ltd.  
#2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 2P1

##### **CIDN:**

1377 0200001  
1377 0800001

### A COMPARISON OF CANADIAN AND GERMAN BUILDING CODES AND STANDARDS

#### Objective:

To provide assistance in the development of a comparison of Canadian and German building codes and standards as applied to up to 3 storey residential wood platform frame construction.

#### CMHC Project Officer:

C. McCallum

#### Division:

International Relations  
Division

#### Contractor:

Dieter Schulz  
Achertalstrasse 13  
77866 Rheinau

#### CIDN:

1492 0900001

### IMPACT OF THE REQUIREMENTS CONTAINED IN THE 1995 NATIONAL ENERGY CODE

#### Objective:

To manage studies which analyze the impact of the requirements contained in the 1995 National Energy Code.

#### CMHC Project Officer:

W. Webster

#### Division:

Technical Policy and  
Research Division

#### Contractor:

Ontario Hydro  
Building Performance  
700 University Avenue  
Toronto, Ontario  
M5G 1X6

#### CIDN:

1387 0200002

### REPORT ON IMPEDIMENTS AND POTENTIAL SOLUTIONS TO ISSUES BETWEEN THE CANADIAN AND GERMAN BUILDING CODES AND STANDARDS

#### Objective:

A report outlining comparative differences, impediments and potential solutions to issues between the Canadian and German building codes and standards, and especially as they relate to fire, safety and structural issues, covering up to 3 storey wood platform frame construction.

#### CMHC Project Officer:

C. McCallum

#### Division:

International Relations  
Division

#### Contractor:

Otto Bryden Erskine Martel  
Architects Incorporated  
30 Rosemount Avenue  
Suite 200  
Ottawa, Ontario  
K1Y 1P4

#### CIDN:

1492 0900002

## Ongoing Projects/Projets en cours

### BIocreTE

#### Objective:

To develop and test a type of building material and system known as biocrete/ biobloc, composed of biomass waste materials and soil cements which may be used together to produce a low cost continuous building envelope.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Socio-Economic Policy and Research Division

#### Contractor:

2949903 Canada Inc.  
118 Valley Drive  
Wakefield (Québec)  
J0X 3G0

#### CIDN:

1444 0200001

### PLANCHERS FLOTTANTS RÉSIDENTIELS

#### Objet :

Étudier l'influence du fractionnement et du facteur de forme sur le comportement des matériaux anti-vibratoires destinés aux planchers flottants durs.

#### Agent de projet pour la SCHL :

M. Macpherson

#### Division :

Division des politiques et de la recherche en matière socio-économique

#### Contractant :

Acoustec Inc.  
Suite 103  
925, rue Newton  
Québec (Québec)  
G1P 4M2

#### NIC :

1442 0200001

### "T" OR "L" SHAPE METAL CORNERS

#### Objective:

Develop and test the performance of formed sheet metal corners and studs which replace corner and intersecting 2X4 wood wall studs used solely to attach inner finish panels in housing.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Socio-Economic Policy and Research Division  
Housing Technology  
Incentives Program

#### Contractor:

Drago Blazevic  
R.R. 1, Site 8, Box 28  
49 Overbrook Drive  
Waverley, Nova Scotia  
B0N 2S0

#### CIDN:

1498 0200001

### **AN EXPLORATORY STUDY OF THE CLIMATIC RELATIONSHIPS BETWEEN RAIN AND WIND. Revised edition.**

*Prepared by D. Surry, P.F. Skerlj and M.J. Mikitiuk. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

This exploratory study had two objectives. The primary objective was to examine the relationship between wind and rainfall rate. A secondary objective was to explore the applicability of the existing Driving Rain Wind Pressures (DRWP), derived by Welsh, Skinner and Morris (1989), to the problems of the building envelope. The data base used in the study consisted of 10-year records (1980-1989) of 1-minute average wind speeds and directions recorded every hour along with the corresponding hourly rainfall for five stations across Canada. Only the months of April to September were examined to ensure the availability of the rainfall data from automatic rain gauges. These data were sorted into seven categories reflecting different rainfall intensities. The wind speed statistics were calculated for each category and wind roses were constructed using the wind directions for all hours and for wet hours only.

It was found that the preferred directions of strong winds accompanying rain are significantly different than those associated with all conditions. This may provide useful information to sophisticated designers of building envelope systems. Results also indicated that mean wind speeds are consistently higher during rainy hours than during all hours (in some cases the mean speeds increase consistently with rainfall rate); however, 10-year extreme wind speeds were found to be consistently smaller for wet hours than for all hours. Much of this reduction of extreme speeds for wet hours is attributed to the reduced number of opportunities for the extremes to occur - i.e. rainy hours only make up a small percentage of the total time.

The limited data base examined indicates that a simpler definition of the DRWP as simply a fraction of the National Building Code of Canada's ten year pressure may be justified, considering numerous other uncertainties involved in designing building envelopes for water penetration.

### **MONITORING OF CAVITY HUMIDITY LEVELS AT CANADA LIFE BUILDING.**

*Prepared by Canadian Building Envelope Science and Technology. Prepared for Housing Innovation Division, Canada Mortgage and Housing Corporation. Funded by Canada Mortgage and Housing Corporation in collaboration with Adason Properties Limited. Ottawa: CMHC, 1995.*

The purpose of this study was to carry out field monitoring of humidity levels in the rainscreen wall cavity at the Canada Life Building in Toronto during and after a rainstorm. Two west-facing wall panels were instrumented for measuring rainfall intensity, relative humidity, temperature and barometric pressure. The first panel was located near the centre of the building, while the second was located closer to the north corner of the building. During a monitoring period of four weeks, one significant rainstorm occurred. The centre panel received less rain than the one closer to the building corner. In a 15-minute rain period, the centre panel rain gauge registered 124 mm of rainfall compared to 205 mm registered by the other gauge.

The Humidity Ratio (HR) curves for each wall cavity and for both the exterior and interior ambient environments were plotted prior to, during and following rainfall. The obtained HR curves revealed that a Maximum Vapour Contribution (MVC) limit to the cavity's air moisture content was established prior to rainfall. Based on the HR/MVC concept, it was possible to detect the presence of free water which penetrated the wall panels. It was also possible to estimate each panel's drying time. The predicted minimum drying time was 2.25 hours for the centre panel and 10.0 hours for the other.



## Ongoing Projects/Projets en cours

### EIFS RAINSCREEN PRODUCT SYSTEM

#### Objective:

Develop new methods of installing exterior insulation and finish systems (EIFS). The new product system will encompass interconnected aspects of the wall portion of the building envelope.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Socio-Economic Policy and Research Division  
Housing Technology Incentives Program

#### Contractor:

STO Enterprises Inc.  
3495 Laird Road  
Units 16-18  
Mississauga, Ontario  
L5L 5S5

#### CIDN:

1268 0200001  
1268 0201001

### FIELD TEST OF IMPROVED WALLS

#### Objective:

To carry out monitoring on a highrise residential building in Ottawa to assess performance of the brick veneer/steel stud envelope.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Technical Policy and Research Division

#### Contractor:

Keller Engineering Associates Inc.  
1390 Prince of Wales Drive  
Ottawa, Ontario  
K2C 3N6

#### CIDN:

0411 0301001  
0411 0302001  
0411 0303001

### PREPARATION OF BEST PRACTICE GUIDE FOR FLASHING DETAILS, MASONRY VENEER/ CONCRETE BLOCK CONSTRUCTION AND WOODFRAME CONSTRUCTION

#### Objective:

To prepare three guides on building envelope design: 1) a 'best practice' guide for concrete block exterior wall construction; 2) a 'best practice' guide for various exterior wall assemblies with wood frame construction; 3) a 'best practice' guide for the flashing of wood, concrete and steel frame building envelopes. The documents will contain details, specifications, sequence of construction and information on inspection and commissioning.

#### CMHC Project Officer:

S. Marshall

#### Division:

Technical Policy and Research Division

#### Contractor:

Robert Halsall & Associates/Otto & Bryden Arch.  
210 Gladstone Avenue  
Ottawa, Ontario  
K2P 0Y6

#### CIDN:

0974 0300001

### RAIN CONTROL AND WIND DRIVEN RAIN

#### Objective:

To carry out work aimed at producing guidelines for the testing and commissioning of pressure equalized rainscreen walls.

#### CMHC Project Officers:

J. Rousseau; P.-M. Busque

#### Division:

Technical Policy and Research Division

#### Contractor:

Quirouette Building Envelope Specialists  
18 Crispin Private  
Ottawa, Ontario  
K1K 2T8

#### CIDN:

1123 0304002  
1123 0300004

**TESTING OF REINFORCED  
OR PRE-STRESSED BRICK  
VENEER WALL SYSTEMS  
USING A BRICK VENEER  
WALL SYSTEM**

**Objective:**

To demonstrate the feasibility and potential for reinforced or pre-stressed brick veneer wall systems, and to identify further research and development needs including laboratory investigations, design details, and construction guidelines.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Socio-Economic Policy and  
Research Division  
Housing Technology  
Incentives Program

**Contractor:**

Canada Brick  
2121 Britannia Road West  
Box 668  
Streetsville, Ontario  
L5M 2C3

**CIDN:**

1177 0200001

**ZERO-CAVITY, PRESSURE  
EQUALIZED RAINSCREEN  
WALL SYSTEM**

**Objective:**

To investigate the performance of the zero-cavity, pressure equalized rainscreen wall system. To investigate the consequences of completely filling the air space behind brick cladding with a fibrous, draining insulation to answer the following questions: can masons build this wall, will the insulation drain, will the cavity pressure equalize, will the brick become too warm or too cold, and will the water reach the sheathing by capillary action?

**CMHC Project Officer:**

J. Rousseau

**Division:**

Technical Policy and  
Research Division

**Contractor:**

University of Waterloo  
Building Engineering Group  
Civil Engineering Department  
Waterloo, Ontario  
N2L 3G1

**CIDN:**

0689 0300001

Ongoing Projects/Projets en cours

**DOCUMENTATION OF  
THE CONDITIONS IN THE  
RIVERSDALE NEIGHBOUR-  
HOOD IN SASKATOON**

**Objective:**

To document the conditions in the Riversdale neighbourhood in Saskatoon which led to the development of a volunteer inspection service, and develop a volunteer training handbook for use in other municipalities, along with a promotional plan for the handbook.

**CMHC Project Officer:**

P. Archer

**Division:**

Technical Policy and  
Research Division

**Contractor:**

University of Manitoba  
Department of Family  
Studies  
Winnipeg, Manitoba  
R3T 2N2

**CIDN:**

1379 0300001

### DEVELOPMENT OF A NEW EDITION OF THE STANDARD FOR CONCRETE CONSTRUCTION FOR HOUSING AND SMALL BUILDINGS (CSA A438)

#### Objective:

To carry out the development of a new edition of the standard for concrete construction for housing and small buildings (CSA A438).

#### CMHC Project Officer:

A. Houston

#### Division:

Technical Policy and  
Research Division

#### Contractor:

Canadian Standards  
Association  
178 Rexdale Boulevard  
Toronto, Ontario  
M9W 1R3

#### CIDN:

1259 0200001

### DURABILITY OF FIBRE-REINFORCED PLASTIC (FRP) REBARS IN CONCRETE STRUCTURES

#### Objective:

Scientific research and development concerning the durability of fibre-reinforced plastic (FRP) rebars in concrete structures.

#### CMHC Project Officer:

A. Houston

#### Division:

Technical Policy and  
Research Division

#### Contractor:

National Research Council  
1200 Montreal Road  
Ottawa, Ontario  
K1A 0R6

#### CIDN:

1172 0200001



# COOPERATIVE AND NON-PROFIT HOUSING/ LOGEMENT SANS BUT LUCRATIF ET COOPÉRATIVES

## Ongoing Projects/Projets en cours

### CONSERVATION DU PATRIMOINE IMMOBILIER COOPÉRATIF

#### Objet :

La recherche a pour thème la conservation du patrimoine immobilier coopératif par l'optimisation des activités d'entretien et de réparations prises en charge par les membres.

#### Agent de projet pour la SCHL :

N. Gervais

#### Division :

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

#### Contractant :

Monsieur André Poulin  
École des hautes études commerciales  
640 - 333, chemin de la Reine-Marie  
Montréal (Québec)  
H3V 1A2

#### NIC :

1281 0200001

### INTÉGRATION DES MEMBRES PRATIQUES DE GESTION DES COOPÉRATIVES D'HABITATION

#### Objet :

La recherche vise à étudier les processus d'intégration et d'habitation au sein des pratiques de gestion en milieu coopérative d'habitation.

#### Agent de projet pour la SCHL :

N. Gervais

#### Division :

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

#### Contractant :

Madame Marie J. Bouchard  
Université du Québec à Montréal  
Case postale 6192  
Succursale Centre-ville  
Montréal (Québec)  
H3C 4R2

#### NIC :

1451 0200001

### PERTINENCE ET FAISABILITÉ DE LA FORMULE COOPÉRATIVE D'HABITATION - ÉQUITÉ

#### Objet :

Le projet de recherche porte sur la conception et la mise en oeuvre d'un programme d'auto-développement pour le secteur coopératif en habitation.

#### Agent de projet pour la SCHL :

D. Myette

#### Division :

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

#### Contractant :

Madame Marie J. Bouchard  
Centre de gestion des coopératives  
École des hautes études commerciales  
333, chemin de la Reine-Marie, local 640  
Montréal (Québec)  
H3V 1A2

#### NIC :

1084 0200001

### POUR UNE MISE EN MARCHÉ EFFICIENTE DES COOPÉRATIVES D'HABITATION AVEC INVESTISSEMENT DES MEMBRES

#### Objet :

Évaluer le(s) produit(s) d'habitation coopérative dans une perspective marketing, mais aussi, élaborer une méthodologie de lancement de ces nouveaux concepts.

#### Agent de projet pour la SCHL :

D. Myette

#### Division :

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

#### Contractant :

Monsieur Guy Ara  
Faculté d'administration  
Université de Sherbrooke  
Sherbrooke (Québec)  
J1K 2R1

#### NIC :

0907 0200001

**RAINING AND NON-PROFIT  
HOUSING ASSOCIATIONS**

**Objective:**

Contribution to create a self-sustaining program to establish a consistent and coherent approach to education and training for staff and volunteer board members of non-profit housing associations across Canada.

**CMHC Project Officer:**

B. Lortie

**Division:**

Direct Portfolio Operations  
Division

**Contractor:**

Canadian Housing and  
Renewal Association  
251 Laurier Avenue West  
Suite 401  
Ottawa, Ontario  
K1P 5J6

**CIDN:**

1467 1501001

1467 1500001

## Ongoing Projects/Projets en cours

### AN EXPLORATION OF DESIRABILITY OF HOUSING LOCATION BY CONSUMERS OF PSYCHIATRIC SERVICES

#### Objective:

To conduct a focus group comprised of tenants from three types of housing, to conduct 60 semi-structured interviews with tenants in the three aforementioned housing settings.

#### CMHC Project Officer:

L. Rodriguez

#### Division:

Socio-Economic Policy and Research Division  
External Research Program

#### Contractor:

Ms. Katherine M. Boydell  
Queen Street Mental Health Centre  
1001 Queen Street West  
Toronto, Ontario  
M6J 1H4

#### CIDN:

1272 0200001

### FEASIBILITY OF DISABILITY-INTEGRATED, UNIVERSALLY DESIGNED INFILL CO-HOUSING IN AN URBAN SETTING

#### Objective:

To create a document which includes: a model of typical infill co-housing based on current literature and post-occupancy evaluation of existing co-housing developments and their residents, etc.

#### CMHC Project Officer:

T. Parker

#### Division:

Socio-Economic Policy and Research Division  
External Research Program

#### Contractor:

Mr. David Wetherow  
Executive Director  
Association for Community Living  
980 Palmerstone Avenue  
Winnipeg, Manitoba  
R3G 1J9

#### CIDN:

1101 0200001

### UN GUIDE ILLUSTRÉ DE CARACTÉRISTIQUES DE CONCEPTION FAVORISANT L'ACCESSIBILITÉ

#### Objet :

De produire un guide illustré de caractéristiques de conception favorisant l'accessibilité, qui soient adaptables et efficaces par rapport aux coûts tout en pouvant être intégrées dans divers types d'habitations.

#### Agent de projet pour la SCHL :

T. Parker

#### Division :

Division des politiques et de la recherche en matière technique

#### Contractant :

Société logique inc.  
3250, boulevard St-Joseph est  
Montréal (Québec)  
H1Y 3G2

#### NIC :

1240 1100001

### HOUSING NEEDS OF PEOPLE WITH DISABILITIES

#### Objective:

To provide a profile of the housing characteristics and needs of people with disabilities using data from the 1991 Census and post-censal Health and Activity Limitations Survey (HALS).

#### CMHC Project Officer:

J. Angus

#### Division:

Socio-Economic Policy and Research Division

#### Contractor:

ARK Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

#### CIDN:

1045 0200003

### PREPARATION OF TWO REFERENCE GUIDES ON TECHNOLOGY

#### Objective:

To design and write the text for the two reference guides on technology.

#### CMHC Project Officer:

T. Parker

#### Division:

Technical Policy and Research Division

#### Contractor:

Roger Dube  
Consulting and Training Services  
825 Wilfrid Lavigne  
Aylmer (Québec)  
J9J 1Z2

#### CIDN:

1261 1100001

### ADAPTING MUNICIPAL HOUSING FOR DEMENTIA

#### Objective:

To contribute to an understanding of what housing providers can do to help residents with dementia age in place.

#### CMHC Project Officer:

L. Rodriguez

#### Division:

Socio-Economic Policy and Research Division  
External Research Program

#### Contractor:

Myra Schiff  
213 - 110 Richmond Street East  
Toronto, Ontario  
M5C 2P9

#### CIDN:

1286 0200001

### AGING IN PLACE: STRATEGIES TO MEET THE NEEDS OF SENIOR TENANTS IN NON-PROFIT HOUSING

#### Objective:

To produce the final manuscript for a publication that will be based on the results of a study that was recently carried out in the province of Nova Scotia: "Aging in Place: Strategies to Meet the Needs of Senior Tenants in Non-profit Housing".

#### CMHC Project Officer:

L. Rodriguez

#### Division:

Socio-Economic Policy and Research Division

#### Contractor:

Social Data Research Ltd.  
130 Slater Street  
Suite 750  
Ottawa, Ontario  
K1P 6E2

#### CIDN:

1427 0200001

### THE CHINESE ELDERLY: SOCIAL INTEGRATION IN METRO HOUSING

#### Objective:

A study to ask the ethnic elderly through interviews how they are dealing with their communication needs in an attempt to ascertain the level of congruence between the services being offered and the ethnic composition of the buildings under study.

#### CMHC Project Officer:

I. Pereira

#### Division:

Socio-Economic Policy and Research Division  
External Research Program

#### Contractor:

Dr. Morris Saldov  
Ginto Consulting and Research  
2 Kensington Avenue  
Toronto, Ontario  
M5T 2J7

#### CIDN:

1285 0200001

### A GUIDE TO PLANNING, DESIGNING, DEVELOPING, MARKETING AND MANAGING HOUSING FOR OLDER CANADIANS

#### Objective:

To produce an easy to follow and practical guide document that will assist both non-profit groups and the private sector in planning, designing, developing, marketing and managing a wide range of housing choices for older Canadians.

#### CMHC Project Officer:

L. Rodriguez

#### Division:

Socio-Economic Policy and Research Division

#### Contractor:

Baycrest Centre for Geriatric Care  
3560 Bathurst Street  
North York, Ontario  
M6A 2E1

#### CIDN:

0869 0200001

### HELPING SENIORS AND PEOPLE WITH DISABILITIES MAINTAIN THEIR INDEPENDENCE AT HOME: A GUIDE TO DELIVERING HOME ADAPTATIONS

#### Objective:

To produce a how-to guide document which will identify and describe the steps and resources involved in planning, designing, implementing, managing and marketing a variety of different approaches to delivering home adaptations for seniors and persons with disabilities.

#### CMHC Project Officer:

L. Rodriguez

#### Division:

Socio-Economic Policy and Research Division

#### Contractor:

University of Manitoba  
Administration Building  
Room 202  
Winnipeg, Manitoba  
R3T 2N2

#### CIDN:

1256 0200001  
1256 1100001



## ELDERLY/PERSONNES ÂGÉES

### HOUSING OPTIONS FOR CANADIANS WITH DEMENTIA

**Objective:**

To produce an easy to follow, illustrated and practical guide document on innovative housing options for people who suffer from dementia.

**CMHC Project Officer:**

L. Rodriguez

**Division:**

Socio-Economic Policy and  
Research Division

**Contractor:**

Communitas Consultants  
4550 Beverley Crescent  
Vancouver, British Columbia  
V6J 4E6

**CIDN:**

1251 0200001

### MODÈLES D'INTERVENTION : SÉCURITÉ EN CAS D'URGENCE DES PERSONNES À MOBILITÉ RÉDUITE ET DES PERSONNES ÂGÉES EN PERTE D'AUTONOMIE

**Objet :**

Cette étude a pour objectif d'intégrer les connaissances et les réflexions actuelles concernant la problématique de la sécurité des personnes âgées et des personnes handicapées vivant en milieu résidentiel régulier, afin de les appliquer au développement des modèles d'intervention pour trois bâtiments multifamiliaux munis d'ascenseur.

**Agent de projet pour la SCHL :**

L. Rodriguez

**Division :**

Division des politiques et de  
la recherche en matière  
socio-économique  
Programme de subventions  
de recherche

**Contractant :**

Madame Sylvie Quintin  
Société Logique Inc.  
3250, Boulevard St.-Joseph  
Est  
Montréal (Québec)  
H1Y 3G2

**NIC :**

1460 0200001

### NEIGHBOURHOOD GROUP HOMES: THE PLANNING, DESIGN AND DEVELOPMENT PROCESS

**Objective:**

To produce a number of  
key recommendations,  
guidelines, and develop-  
ment strategies that will  
shorten the learning curve  
for the volunteers, bureau-  
crats and professionals who  
usually develop small group  
homes for seniors.

**CMHC Project Officer:**

L. Rodriguez

**Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

**Contractor:**

Ms. Clarke and Dr. Gutman  
Gerontology Research  
Centre  
Simon Fraser University  
2800 - 515 West Hastings  
Street  
Vancouver, British Columbia  
V6B 5K3

**CIDN:**

1453 0200001

### PRODUCE A COMPUTERIZED SET OF TOOLS THAT WILL ASSIST IN DEVELOPING PROFILES OF THE NEEDS AND PREFERENCES OF SENIORS

**Objective:**

To improve the current  
version of "Seniors",  
examine ways of  
streamlining the seniors  
survey questionnaire and  
the service providers survey  
questionnaire with a view to  
improving data collection  
and entry systems.

**CMHC Project Officer:**

L. Rodriguez

**Division:**

Socio-Economic Policy and  
Research Division

**Contractor:**

Tetrad Computer  
Applications Ltd.  
1145 West Georgia Street  
Vancouver, British Columbia  
V6G 2T3

**CIDN:**

0528 0200002

**REGIONAL SENIORS  
RESEARCH ACTIVITY -  
ATLANTIC**

**Objective:**

To raise awareness in the Fredericton area of the network to ensure that seniors fully utilize the service; to develop and implement a communication plan for the Seniors Renovation Advisory Network's Service.

**CMHC Project Officer:**

B. Gray

**Division:**

Atlantic Region

**Contractor:**

Bissett Matheson  
Communications  
31 William Street  
Fredericton, New Brunswick  
E3A 4V7

**CIDN:**

0883 1351001

**REGIONAL SENIORS  
RESEARCH ACTIVITY -  
ATLANTIC**

**Objective:**

To test a model in which trades people retired from the construction field, or other interested volunteers, are trained to inform seniors on home adaptations and repairs.

**CMHC Project Officer:**

B. Gray

**Division:**

Regional Offices

**Contractor:**

New Brunswick Department  
of Municipalities, Culture  
and Housing  
P.O. Box 6000  
Fredericton, New Brunswick  
E3B 5H1

**CIDN:**

0883 1350003

**STUDY OF THE HOUSING  
AND SOCIAL NEEDS OF  
SENIORS IN THE  
NORTHWEST TERRITORIES**

**Objective:**

To study and analyze the needs of aboriginal and non-aboriginal seniors living in the Northwest Territories in order to determine housing and support services requirements, with projections to the year 2005.

**CMHC Project Officer:**

B. Gray

**Division:**

Socio-Economic Policy and  
Research Division

**Contractor:**

Treeline Planning  
Services Ltd.  
14 Ptarmigan Road  
Yellowknife, Northwest  
Territories  
X1A 2W8

**CIDN:**

0883 1322001

### **AMÉLIORATION DE L'ENVIRONNEMENT PAR LA GESTION DE L'ÉNERGIE DANS LES VILLES : PERSPECTIVES CANADIENNES.**

*Préparé par Torrie Smith Associates, Inc. Préparé pour la Division des relations internationales, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1994.*

En mai 1991, l'OCDE a approuvé le mandat d'un groupe de projet chargé d'améliorer l'environnement par la gestion de l'énergie dans les villes. Dans le cadre des travaux du projet sur la gestion de l'énergie dans les villes afin d'améliorer l'environnement, on a demandé aux pays membres participants de préparer des documents de travail sur la situation actuelle et sur la meilleure marche à suivre concernant la gestion de l'énergie dans les villes dans leurs pays. Ce document est un élément de la contribution du Canada à ce projet. Le document a un double objectif : premièrement, décrire la raison d'être et le fondement de la gestion de l'énergie dans les villes canadiennes; et deuxièmement, mettre en évidence et illustrer les meilleures pratiques suivies au Canada en matière de gestion de l'énergie dans les villes de façon à fournir des renseignements et à proposer aux administrations locales du Canada une orientation stratégique pour l'avenir.

Le document contient des renseignements généraux sur l'offre et la demande de combustibles et d'électricité au Canada et sur les répercussions environnementales connexes, en particulier en ce qui a trait aux questions d'énergie et d'environnement dans les villes. D'autres données générales sur le rôle des administrations locales dans le système politique canadien sont également présentées. Les résultats d'un sondage sur la gestion de l'énergie dans les villes afin d'améliorer l'environnement au Canada ont été décrits; on y met l'accent sur les meilleures démarches et sur des exemples de programmes particulièrement novateurs. Le document se termine par un certain nombre d'observations générales sur les motifs qui poussent les municipalités canadiennes à adopter des programmes de gestion de l'énergie dans les villes, les obstacles auxquels font face ces municipalités ainsi que les éléments communs qui sont essentiels à la réussite de l'opération.

NOTE: Also available in English under the title: Environmental Improvement Through Urban Energy Management: Canadian Overview.

### **ENVIRONMENTAL IMPROVEMENT THROUGH URBAN ENERGY MANAGEMENT: CANADIAN OVERVIEW.**

*Prepared by Torrie Smith Associates, Inc. Prepared for International Relations Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

In May 1991, the OECD approved the terms of reference for a Project Group on Environmental Improvement Through Energy Management. As part of the work of the Project on Urban Energy Management for Environmental Improvement, participating member countries were asked to prepare review papers describing the current approach and best practice with respect to urban energy management in their countries. This paper has been prepared as part of Canada's contribution to the project. The paper has a dual purpose: firstly, to describe the rationale and basis for urban energy management in a Canadian context; and secondly, to highlight and illustrate the best Canadian practice of urban energy management in a way that both informs and suggests a future strategic direction for local governments in Canada.

The paper contains some background material on the supply and demand of fuels and electricity in Canada and the related environmental impacts, with particular reference to urban energy and environment issues. Additional background material on the role of local government in the Canadian political system is also presented. The results of a survey of urban energy management for environmental



improvement in Canada are described, with an emphasis on best practice and illustrations of particularly innovative programmes. The paper concludes with a number of general observations with regard to the reasons Canadian municipalities are adopting urban energy management programmes, the barriers they are encountering, and the common elements essential to success.

NOTE : Aussi disponible en français sous le titre : *Amélioration de l'environnement par la gestion de l'énergie dans les villes : perspectives canadiennes.*

## Ongoing Projects/Projets en cours

### AMÉLIORATION DE L'ISOLATION THERMIQUE DANS LE COMBLE DES TOITS PLATS

#### Objet :

Mettre au point de l'équipement et un protocole de mesure des caractéristiques relatives à la ventilation et à l'humidité dans le comble des toits plats; installer l'équipement dans trois combles et mesurer les différences de performance avant et après les travaux d'amélioration de l'isolation thermique.

#### Agent de projet pour la SCHL :

D. Fugler

#### Division :

Division des politiques et de la recherche en matière technique

#### Contractant :

Hydro-Québec  
Laboratoire des technologies électrochimiques  
600, rue de la Montagne  
Shawinigan (Québec)  
G9N 7N5

#### NIC :

1377 0801001  
1377 0201001

### ASSESS THE INDOOR ENVIRONMENT AND ENERGY CONSUMPTION CHARACTERISTICS OF 8 MID-RISE RESIDENTIAL BUILDINGS

#### Objective:

To analyze energy and air quality in mid-rise residential buildings, through a survey of four mid-rise residential buildings in both Toronto and Vancouver.

#### CMHC Project Officer:

D. Hill

#### Division:

Technical Policy and Research Division

#### Contractor:

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### CIDN:

1373 0200001  
1373 0800001

### COMMUNITY ENERGY SYSTEM PROJECT: ENERGY EVALUATION OF SENIORS HOUSING UNIT - WHITESANDS FIRST NATION

#### Objective:

To accurately determine the energy loads for a small cogeneration facility to serve a 10 unit seniors housing project at Whitesands First Nation near Armstrong, Ontario.

#### CMHC Project Officer:

C. Ives

#### Division:

Technical Policy and Research Division  
Panel on Energy Research and Development

#### Contractor:

R. Donn Milligan  
1050633 Ontarion Inc.  
Kenora, Ontario  
P9N 3X7

#### CIDN:

1032 0800002

### ENERGY AUDITS OF TEN HIGH-RISE RESIDENTIAL BUILDINGS

#### Objective:

To determine the total energy gain and losses for 10 high-rise buildings across the country.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Technical Policy and Research Division

#### Contractor:

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

#### CIDN:

1291 0300001



**ENVIRONMENTAL IMPACT  
STUDY FOR HOUSING  
ENERGY EFFICIENCY  
TECHNOLOGY IMPACTS**

**Objective:**

To assess the energy efficiency of improved thermal envelope performance and the impact of the envelope changes on the general environment and on indoor air quality.

**CMHC Project Officer:**

D. Hill

**Division:**

Technical Policy and  
Research Division  
Panel on Energy Research  
and Development

**Contractor:**

SAR Engineering Limited  
8884 - 15th Avenue  
Burnaby, British Columbia  
V3N 1Y3

**CIDN:**

0847 0200001  
0847 0201001

**ENERGY PERFORMANCE  
CONTRACTING AND THE  
RESIDENTIAL SECTOR**

**Objective:**

To explore the feasibility of applying energy performance contracting to the residential sector.

**CMHC Project Officer:**

D. D'Amour

**Division:**

Socio-Economic Policy and  
Research Division

**Contractor:**

Marbek Resource  
Consultants Ltd.  
Suite 500  
1355 Bank Street  
Ottawa, Ontario  
K1H 8K7

**CIDN:**

1372 0200001

**HEAT, AIR, AND MOISTURE  
TRANSFER IN HIGH-RISE  
BUILDING ENVELOPES**

**Objective:**

To develop design guidelines for energy efficiency and durability of wall structures and roofing systems of residential high-rise buildings.

**CMHC Project Officer:**

D. Hill

**Division:**

Technical Policy and  
Research Division

**Contractor:**

National Research Council  
Building M-20  
Montreal Road  
Ottawa, Ontario  
K1A 0R6

**CIDN:**

0719 0200001  
0719 0201001

**MONITORING OF THE  
ENERGY EFFICIENT  
APARTMENT BUILDINGS  
AND MECHANICAL SYSTEMS**

**Objective:**

To carry out monitoring of the energy efficient apartment buildings and mechanical systems at 3015 and 3023 Parkerhill Road, Mississauga.

**CMHC Project Officer:**

W. Webster

**Division:**

Technical Policy and  
Research Division  
Panel on Energy Research  
and Development

**Contractor:**

Tatry - Pathway Co-op  
Peel Non-profit Housing  
3015 Parkerhill Road  
Mississauga, Ontario  
L5B 4B3

**CIDN:**

1260 0200001  
1260 0800001

**PRECALCULATION OF  
THERMAL PERFORMANCE  
VALUES FOR TABLES IN THE  
1995 NATIONAL ENERGY  
CODE**

**Objective:**

To precalculate thermal performance values of building assemblies for the National Energy Code for Buildings 1995 and the National Energy Code for Houses 1995.

**CMHC Project Officer:**

W. Webster

**Division:**

Technical Policy and  
Research Division

**Contractor:**

Enermodal Engineering  
Limited  
368 Phillip Street  
Waterloo, Ontario  
N2L 5J1

**CIDN:**

1387 0200001

**UPGRADING OF OPTIMIZE****Objective:**

Update Statistics Canada data; programme revision and upgrade; expansion of programme versatility; users guide; first level beta testing; second level beta testing of Optimize.

**CMHC Project Officer:**

P. Russell

**Division:**

Technical Policy and Research Division

**Contractor:**

Sheltair Scientific Ltd.  
2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

**CIDN:**

0865 0201002

**WOOD FUELED DOMESTIC  
ENERGY CONVERSION  
SYSTEMS****Objective:**

To carry out a study of wood fueled domestic energy conversion systems.

**CMHC Project Officer:**

P. Russell

**Division:**

Technical Policy and Research Division

**Contractor:**

Allen Associates  
400 Mount Pleasant Road  
Suite 5  
Toronto, Ontario  
M4S 2L6

**CIDN:**

1423 0200001  
1423 0800001

# ENVIRONMENTAL POLLUTION AND CONTROL/ POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

## Ongoing Projects/Projets en cours

### ADVICE ON THE DRAFTING OF EMISSION TEST STANDARDS

#### Objective:

Provide specific advice on improving three draft emission test standards for caulks and sealants and pressed wood products.

#### CMHC Project Officer:

J. White

#### Division:

Technical Policy and  
Research Division

#### Contractor:

Stewart S. Fritts  
2415 Lazybrook  
Houston, Texas  
77008

#### CIDN:

0200002

### DEVELOPMENT OF A MECHANICAL SYSTEM FOR A RESIDENTIAL CLEAN HOME

#### Objective:

To determine the best mechanical system or systems that will provide heating and ventilation for the "clean" addition to an existing house.

#### CMHC Project Officer:

V. Salares

#### Division:

Technical Policy and  
Research Division

#### Contractor:

Drerup-Armstrong Ltd.  
P.O. Box 130  
Carp, Ontario  
K0A 1L0

#### CIDN:

1213 1100001  
1213 1101001

### DIRECTORY OF RESIDENTIAL INDOOR AIR QUALITY PRODUCTS AND SERVICES

#### Objective:

To develop a directory of residential indoor air quality products and services.

#### CMHC Project Officer:

J. White

#### Division:

Technical Policy and  
Research Division  
Panel on Energy Research  
and Development

#### Contractor:

Cullbridge Marketing and  
Communications  
809 Quinlan Road  
Ottawa, Ontario  
K1G 1R8

#### CIDN:

1244 0201003  
1244 0800002

### EMISSION TESTING OF SELECTED BUILDING MATERIALS

#### Objective:

To conduct emission tests on groups of selected building materials (caulks, sealants, urethane foam, and pressed wood products).

#### CMHC Project Officer:

V. Salares

#### Division:

Technical Policy and  
Research Division

#### Contractor:

National Research Council  
Institute for Research in  
Construction  
Montreal Road  
Ottawa, Ontario  
K1A 0R6

#### CIDN:

0964 1100002

### AN EVALUATION OF THE SCREENING MEASUREMENT AS AN INDICATOR OF AVERAGE ANNUAL INDOOR RADON EXPOSURE

#### Objective:

Assess the short term screening measurement as an indicator of the average annual radon levels in homes.

#### CMHC Project Officer:

J. White

#### Division:

Socio-Economic Policy and  
Research Division  
External Research Program

#### Contractor:

Michael W.R. LaFontaine  
LaFontaine Consulting  
Services  
106 Krug Street  
Kitchener, Ontario  
N2H 2X9

#### CIDN:

1276 0200001

**EXTERNAL REVIEW OF CMHC  
PROJECT ON EMF  
ELECTROMAGNETIC FIELDS)  
IN CANADIAN HOUSING**

**Objective:**

To provide an external specialist review of CMHC's exploratory survey project on EMF in Canadian housing which will include a literature review, a field survey of 25 Canadian houses, and a final report.

**CMHC Project Officer:**

C. Ives

**Division:**

Technical Policy and  
Research Division

**Contractor:**

Dr. Paul Heroux  
McGill University School of  
Occupational Health  
1130 Pine Avenue West  
Montréal (Québec)  
H3A 1A3

ENERGETICS Inc.  
7164 Columbia Gateway  
Drive  
Columbia, MD  
21046

**CIDN:**

1051 0200003  
1051 0200002

**GOOD HOUSES, BAD  
HOUSES, WALLACEBURG  
PHASE II**

**Objective:**

A study of the performance of houses and the health of people in them.

**CMHC Project Officer:**

J. White

**Division:**

Technical Policy and  
Research Division

**Contractor:**

Morrison Hershfield Limited  
4 Lansing Square  
North York, Ontario  
M2J 1T1

**CIDN:**

1368 02401

**MECHANICAL SYSTEM FOR  
THE CMH4C HOUSE**

**Objective:**

To supply a prototype mechanical system for a prefab house designed specifically for people who are environmentally hypersensitive.

**CMHC Project Officer:**

P. Russell

**Division:**

Technical Policy and  
Research Division

**Contractor:**

Geddes Enterprises  
45 Massey Lane  
Bramalea, Ontario  
L6S 2V8

**CIDN:**

0928 1103001

**A PLANNING MODEL FOR  
ESTIMATION OF  
PHOSPHORUS LOADING  
FROM ON-SITE SYSTEMS**

**Objective:**

A systematic examination of the variables that may control phosphorus contributions to lakes. The model will recognize loadings leaving an on-site system, differences between failed systems and normal operation, geology, and soils.

**CMHC Project Officer:**

A. Houston

**Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

**Contractor:**

Dr. Donald H. Waller  
Technical University of N.S.  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

0918 0200001

**SOIL GASES IN HIGH-RISE  
APARTMENT BUILDINGS**

**Objective:**

To investigate how soil gases enter high-rise apartment buildings, and to see whether underground parking structures act as a barrier to soil gas entry.

**CMHC Project Officer:**

D. Fugler

**Division:**

Technical Policy and  
Research Division

**Contractor:**

Jacques Whitford  
Environment Limited  
2781 Lancaster Road  
Suite 200  
Ottawa, Ontario  
K1B 1A7

**CIDN:**

1374 0200001



# ENVIRONMENTAL POLLUTION AND CONTROL/ POLLUTION DE L'ENVIRONNEMENT ET SON CONTRÔLE

## **SURVEY OF ADVERSE HEALTH EFFECTS OF MOULD EXPOSURE**

### **Objective:**

To support the survey called "The Respiratory Health Effects of Indoor Moulds". This study will look at about 500 houses to identify how much biologically-active material there is in house air and dust. Frequency of cough will also be measured and compared to parental reports. In the final phase, the health of occupants will be assessed as well as the reasons for moisture problems in 100 of the houses.

### **CMHC Project Officer:**

J. White

### **Division:**

Technical Policy and  
Research Division

### **Contractor:**

Health and Welfare Canada  
Bureau of Chemical Hazards  
Environmental Health  
Centre  
Room 130, Tunney's Pasture  
Ottawa, Ontario  
K1A 0L2

### **CIDN:**

0843 0201001

## **A SURVEY OF ELECTROMAGNETIC FIELD LEVELS IN CANADIAN HOUSING**

### **Objective:**

To review the state-of-the-art in knowledge and housing research into EMF and prepare an interim report, to conduct a field survey of EMF levels in representative housing, and to prepare a report on the findings with recommendations for remedial measures.

### **CMHC Project Officer:**

C. Ives

### **Division:**

Technical Policy and  
Research Division

### **Contractor:**

The Planetary Association  
for Clean Energy Inc.  
100 Bronson Avenue  
Suite 1001  
Ottawa, Ontario  
K1T 6G8

### **CIDN:**

1051 0200001

### **COSTS AND BENEFITS FOR MUNICIPALITIES OF MANDATORY RESIDENTIAL FIRE SPRINKLERS**

#### **Objective:**

This study will impartially assess on technically-justified economic grounds the costs and benefits to municipalities and other jurisdictions of mandatory installation of fire sprinklers in all new residential construction. Secondly, the assessment will identify the benefits and risks of automatic sprinklers, and the effects on construction costs, housing costs, and on maintenance and service costs.

#### **CMHC Project Officer:**

T. Kerwin

#### **Division:**

Technical Policy and Research Division

#### **Contractor:**

Arencon Inc.  
1401 Captain Court  
Mississauga, Ontario  
L5J 1A9

#### **CIDN:**

1235 0300002  
1235 0302001

### Ongoing Projects/Projets en cours

#### **DRAIN GAIN**

##### **Objective:**

To test and evaluate the drain gain, a waste water heat recovery exchanger and storage device aimed at the residential market.

##### **CMHC Project Officer:**

M. Macpherson

##### **Division:**

Socio-Economic Policy and Research Division

##### **Contractor:**

Winston MacKelvie  
Box 1156  
Knowlton (Québec)  
J0E 1V0

##### **CIDN:**

1443 0200001

#### **POÊLES À BOIS ET QUALITÉ DE L'AIR INTÉRIEUR**

##### **Objet :**

Comparer la qualité de l'air intérieur entre des maisons de la région de Québec utilisant un poêle à bois comme source de chauffage à d'autres habitations qui n'en utilisent pas.

##### **Agent de projet pour la SCHL :**

D. Fugler

##### **Division :**

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

##### **Contractant :**

Benoît Lévesque  
Centre de santé publique de Québec  
2050, boulevard René-Lévesque ouest  
Sainte-Foy (Québec)  
G1V 2K8

##### **NIC :**

1459 0200001

#### **SURVEY OF NORTH AMERICAN FURNACE HEAT EXCHANGER TEST METHODS**

##### **Objective:**

To survey Canadian and American gas utilities to find out what methods they use in field testing for heat exchanger leakage; obtain copies of test protocol and equipment lists; establish field use, acceptance and success of tests; analyze the data collected and recommend test methods that should be used in Canada.

##### **CMHC Project Officer:**

D. Fugler

##### **Division:**

Technical Policy and Research Division

##### **Contractor:**

Canadian Gas Research Institute  
55 Scarsdale Road  
Toronto, Ontario  
M3B 2R3

##### **CIDN:**

1505 0200001

# HIGH-RISE CONSTRUCTION/ CONSTRUCTION D'IMMEUBLES DE GRANDE HAUTEUR

## Ongoing Projects/Projets en cours

### DEVELOPMENT AND DELIVERY OF A TRAINING COURSE AND WORKSHOP ON TECHNICAL AUDITS OF MULTI-UNIT RESIDENTIAL BUILDINGS

#### Objective:

Preparation of an Instructor's manual, a student's manual and the delivery of a pilot workshop relating to technical audits of multi-unit residential buildings.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Technical Policy and  
Research Division

#### Contractor:

Buchan Lawton Parent Ltd.  
Unit 5  
5370 Canotek Road  
Ottawa, Ontario  
K1J 9E6

#### CIDN:

1537 0300001

### DEVELOPMENT OF A COMMISSIONING PLAN FOR THE WINNERS OF THE IDEAS CHALLENGE

#### Objective:

Develop a plan for commissioning the building envelope for thermal performance, airtightness and water penetration control to be utilized by the winners of the IDEAS Challenge.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Technical Policy and  
Research Division

#### Contractor:

Morrison Hershfield Limited  
2440 Don Reid Drive  
Ottawa, Ontario  
K1H 8P5

#### CIDN:

0840 0306001

### INDUSTRY GUIDELINES ON THE COMPARTMENTALIZING OF THE PRESSURE EQUALIZED CAVITY

#### Objective:

To produce industry guidelines on the compartmentalizing of the pressure equalized cavity.

#### CMHC Project Officer:

P.-M. Busque

#### Division:

Technical Policy and  
Research Division

#### Contractor:

Boundary Layer Wind  
Tunnel Laboratory  
University of Western  
Ontario  
London, Ontario  
N6A 5B9

#### CIDN:

1123 0300002

### INVESTIGATE THE EFFECTS OF COMPARTMENTALIZING APARTMENTS OF HIGH-RISE BUILDINGS TO REDUCE STACK PRESSURES

#### Objective:

To carry out a study to investigate the effects of compartmentalizing apartments of high-rise buildings to reduce stack pressures.

#### CMHC Project Officer:

J. Rousseau

#### Division:

Technical Policy and  
Research Division

#### Contractor:

Morrison Hershfield Limited  
2440 Don Reid Drive  
Ottawa, Ontario  
K1H 8P5

#### CIDN:

1331 0300001

### OPERATING MECHANICAL AND ELECTRICAL EQUIPMENT AND SYSTEMS IN MEDIUM AND HIGH-RISE RESIDENTIAL BUILDINGS

#### Objective:

To develop reference documents and training materials for operating mechanical and electrical equipment and systems in medium and high-rise residential buildings.

#### CMHC Project Officer:

W. Webster

#### Division:

Technical Policy and  
Research Division

#### Contractor:

Efficiency Engineering  
Incorporated  
978 Mary Avenue  
Cambridge, Ontario  
N3H 4N5

#### CIDN:

1250 0200001



## Ongoing Projects/Projets en cours

### ENVIRONMENTAL SCAN RE: HOMELESSNESS

**Objective:**

To conduct an overview of the demographics of homelessness in Canada, the main issues affecting this population, and the agencies serving them.

**CMHC Project Officer:**

T. Kerwin

**Division:**

Technical Policy and  
Research Division

**Contractor:**

Luba Serge  
29 Easton  
Montréal (Québec)  
H4X 1K9

**CIDN:**

1548 0300001

### ESTIMATING HOMELESSNESS

**Objective:**

To develop a methodology for estimating the number of homeless people in individual cities/areas.

**CMHC Project Officer:**

J. Angus

**Division:**

Socio-Economic Policy and  
Research Division

**Contractor:**

P. Lynn McDonald  
Centre for Applied Social  
Research  
Faculty of Social Work  
University of Toronto  
246 Bloor Street West  
Toronto, Ontario  
M5S 1A1

**CIDN:**

1247 0200001

### ADJUST-A-FORM

**Objective:**

Test the performance of an extruded reusable aluminum form system "Adjust-A-Form" which can be used for forming strip and column concrete footings for housing.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Socio-Economic Policy and Research Division  
Housing Technology Incentives Program

**Contractor:**

Raymax Construction Limited  
1038 Lesperance Road  
Tecumseh, Ontario  
N8N 1W8

**CIDN:**

1501 0200001

### CMHC/ONHWP BUILDERS' MATERIAL DEVELOPMENT

**Objective:**

To revise and update 12 of the 14 CMHC Builders' Workshop Series modules and regroup them into 5 new booklets and a Trainer's Guide.

**CMHC Project Officer:**

T. Marshall

**Division:**

Technical Policy and Research Division

**Contractor:**

The Energy Technology Access Group  
15010 Yonge Street  
Aurora, Ontario  
L4G 1M6

**CIDN:**

1364 0300001

### CANADIAN WOOD-FRAME HOUSE CONSTRUCTION PUBLICATION

**Objective:**

The publication, "Canadian Wood-Frame House Construction", will be revised and updated to include those new technological advancements and construction techniques. The changes will also take into account the upcoming revisions which are to be included in the 1995 edition of the National Building Code as well as any additional up-to-date information on the environmental and energy concerns of today. The concept of healthy housing shall be incorporated into this publication.

**CMHC Project Officers:**

D. Smith  
T. Marshall

**Division:**

Technical Policy and Research Division

**Contractor:**

Habitechnica  
88 Prince Arthur Avenue  
Toronto, Ontario  
M5R 1B6

**CIDN:**

1413 0300001

### HOUSING DE-CONSTRUCTION

**Objective:**

To investigate and carry out a de-construction procedure on a house to make it more economically and environmentally viable compared to current housing demolition practices.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Socio-Economic Policy and Research Division

**Contractor:**

Design Consultants  
2-417 Bronson Avenue  
Ottawa, Ontario  
K1R 6J6

**CIDN:**

1439 0200001

### RATIONALE FOR MASS PRODUCED BALED FIBRE HOUSING

**Objective:**

To develop and perfect a working prototype tool for stabilizing baled fibre walls and develop a comprehensive manual that will outline design characteristics.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Socio-Economic Policy and Research Division  
Housing Technology Incentives Program

**Contractor:**

Linda Chapman  
Architect  
27 Third Avenue  
Ottawa, Ontario  
K1S 2J5

**CIDN:**

1502 0200001

### THE CANADIAN HOUSING SYSTEM IN THE 1990s.

*Prepared by James McKellar. Ottawa: Canada Mortgage and Housing Corporation, 1995 (NHA 6800).*

This booklet examines how Canadians are housed, the role that the housing sector plays in the economy of the country, the way housing markets operate in Canada, the dynamics of the residential mortgage market, and the respective roles of the private and public sectors in providing for the housing needs of Canadians. The booklet also describes the quintessential Canadian home and examines the effects of lifestyle changes on housing design and the demand for new types of housing.

NOTE : Aussi disponible en français sous le titre : Le Système canadien de logement dans les années 1990 (LNH 6801).

### LES EXPERTS EN HABITATION (ÉD. RÉV.).

*Ottawa : Société canadienne d'hypothèques et de logement, 1995.*

La Société canadienne d'hypothèques et de logement (SCHL) est la source d'information sur le logement la plus complète qui soit, que vous soyez un propriétaire, un futur acheteur, un rénovateur, un constructeur, ou une personne handicapée. Cette brochure fait un survol des principaux programmes de la SCHL pour donner un logement aux Canadiens. Elle décrit également l'attachement continu de la SCHL dans les secteurs technologique, économique, environnemental et social de l'industrie du logement. Chaque section donne une liste de publications contenant des renseignements additionnels sur des sujets particuliers. La brochure est imprimée en gros caractères et inclut un message en braille au dos de la couverture pour répondre aux besoins des personnes handicapées.

NOTE: Also available in English under the title: Your Housing Experts.

### LE SYSTÈME CANADIEN DE LOGEMENT DANS LES ANNÉES 1990.

*Préparé par James McKellar. Ottawa : Société canadienne d'hypothèques et de logement, 1995 (LNH 6801).*

Ce livret examine les modes de logement des Canadiens, l'influence du secteur du logement dans l'économie du pays, la façon dont les marchés du logement fonctionnent au Canada, la dynamique du marché des prêts hypothécaires résidentiels, et enfin, les rôles respectifs que remplissent les secteurs privé et public pour combler les besoins des Canadiens en matière de logement. Le livret décrit également la maison canadienne typique et examine les effets des changements du style de vie sur la conception résidentielle et sur la demande de nouveaux types de logements.

NOTE: Also available in English under the title: The Canadian Housing System in the 1990s (NHA 6800).

## YOUR HOUSING EXPERTS (REV. ED.)

Ottawa: Canada Mortgage and Housing Corporation, 1995.

Canada Mortgage and Housing Corporation (CMHC) is Canada's most comprehensive source of information on housing, whether you are a homeowner, a potential buyer, a renovator, a builder, or a person with disabilities. This booklet summarizes some of the many ways that CMHC helps to house Canadians. It also describes CMHC's ongoing commitment to research that improves the technical, economic, environmental and social aspects of housing. Publications which provide additional information on specific topics are listed in each section. The booklet also features large print and includes a message written in Braille on the back of the cover for people with disabilities.

NOTE : Aussi disponible en français sous le titre : *Les Experts en habitation*.

## Ongoing Projects/Projets en cours

### FUTURE ECONOMIC CONDITIONS AND THE HOUSING SECTOR

#### Objective:

To study the potential impacts of various scenarios of long term economic conditions, including the possibility of deflation, for the housing sector. The research will include a review of the general conditions associated with continued slow economic growth and deflationary contraction and pay special attention to the behaviour of households, the housing industry and financial institutions in such contexts. Through the development of scenarios of future economic conditions, the study will explore the implications for various components of the housing sector.

#### CMHC Project Officer:

D. Chamberland

#### Division:

Socio-Economic Policy and Research Division  
Centre for Future Studies in Housing and Living Environments  
Experts in Residence Program

#### Contractor:

Nicole Morgan  
377 Maple Lane  
Ottawa, Ontario  
K1M 1H7

#### CIDN:

1015 0202001

### HIFE-BASED HOUSE PRICE INDEXES FOR CANADIAN CITIES AND MLS AVERAGE PRICES

#### Objective:

To provide an inexpensive price index showing house price change in Canadian CMA's starting in 1990; to provide evidence on the reliability of the MLS price averages as price indexes for Canadian CMA's.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Socio-Economic Policy and Research Division  
External Research Program

#### Contractor:

Mrs. Marion Steele  
Associate Professor  
Department of Economics  
University of Guelph  
Guelph, Ontario  
N1G 2W1

#### CIDN:

1288 0200001

### HOUSING A DIVERSE SOCIETY

#### Objective:

Canadian society is undergoing a number of changes, including a proliferation of non-traditional family structures and household types, and increased ethnicity in the population mix. This project will raise awareness and better define the challenge of ensuring that the housing market meets the needs of Canada's diversifying population, and will illustrate what society can do to address this issue. A report will be prepared on the subject of "Housing A Diverse Society" and will be presented at the symposium called "Housing Affordability in a Changing Society". It will also serve as a starting point for developing an action plan for follow-up research work that should be done on this subject.

#### CMHC Project Officer:

J. Mugford

#### Division:

Strategic Planning Division

#### Contractor:

Prairie Research Associates Inc.  
306-326 Broadway  
Winnipeg, Manitoba  
R3C 0S5

#### CIDN:

1352 0100001



### MEASURING THE EFFECTS OF MUNICIPAL REGULATION ON HOUSE PRICES AND RENTS

**Objective:**

A background paper will be prepared to identify what CMHC and its housing partners can do, and the contributions each partner can make, to quantitatively measure the impact of municipal regulations on house prices and rents. It will be presented for discussion at the CMHC-hosted symposium, "Housing Affordability in a Changing Society", on November 2, 1995, with a view to developing a research plan for additional work to be carried out on it in 1996.

**CMHC Project Officer:**

David Scherlowski

**Division:**

Socio-Economic Policy and  
Research Division

**Contractor:**

Tsuriel Somerville  
Faculty of Commerce - UBC  
2053 Main Mall  
Vancouver, BC  
V6T 1Z2

**CIDN:**

1494 01000001

### PRESTON DEMONSTRATION

**Objective:**

To determine the viability of a self-built housing assistance option in an urban setting.

**CMHC Project Officer:**

R. Lajoie

**Division:**

Senior Vice-President's  
Office  
Policy, Research and  
Communications

**Contractor:**

The Nova Scotia  
Department of Housing and  
Consumer Affairs  
Alderney Gate  
40 Alderney Drive, 5th Floor  
P.O. Box 815  
Dartmouth, Nova Scotia  
B2Y 3Z3

**CIDN:**

1011 06000001

### PROCEEDINGS OF THE HABITAT 94 CONFERENCE

**Objective:**

To support production of  
proceedings of the Habitat  
94 conference - a joint  
conference between the  
Canadian Institute of  
Planners and the  
International Federation of  
Housing and Planning.

**CMHC Project Officer:**

D. Chamberland

**Division:**

Socio-Economic Policy and  
Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

**Contractor:**

Canadian Institute of  
Planners  
541 Sussex Drive  
2nd Floor  
Ottawa, Ontario  
K1N 6Z6

**CIDN:**

1295 02000002

### ROLE OF HOUSING IN AN ENABLING SOCIETY

**Objective:**

Analyze and discuss the  
various roles housing policy  
can play in the context of  
the enabling society model.  
Propose various ways  
housing policies can be used  
to promote the philosophy  
of the enabling society  
while elaborating on  
CMHC's role in this regard.

**CMHC Project Officer:**

E. Nera

**Division:**

Socio-Economic Policy and  
Research Division

**Contractor:**

Ekos Research Associates  
275 Sparks Street  
Suite 801  
Ottawa, Ontario  
K1R 7X9

**CIDN:**

1006 01000001

## TRENDS - HOUSING AND URBAN COMMUNITIES IN THE FUTURE

### Objective:

A background paper, based on existing public opinion research, will be prepared to describe the views potential first-time homebuyers have towards housing and urban communities, and the reasoning behind their views by addressing the following four broad questions:

- (1) Investment: To what extent would potential first-time homebuyers consider housing as a good investment?
- (2) New Economy: What does the "New Economy" mean to potential first-time homebuyers from a housing perspective?
- (3) Fiscal Situation: How do potential first-time homebuyers see the fiscal situation impacting them from a housing perspective?
- (4) Environment: What do potential first-time homebuyers think about housing from an environmental perspective, both indoor and outdoor environment? The background paper will be presented by the contractor at the CMHC-hosted symposium, "Housing Affordability in a Changing Society", on November 2, 1995.

### CMHC Project Officer:

David Scherlowski

### Division:

Socio-Economic Policy and  
Research Division

### Contractor:

Dr. Darrell Bricker  
Angus Reid Group, Inc.  
1400 - 1 Nicholas Street  
Ottawa, Ontario  
K1N 7B7

### CIDN:

1490 0100001

## TRI-COUNTRY CONFERENCE 1994

### Objective:

To support the production of 12 policy research papers addressing the broader influences and possible directions for housing policy in each of Canada, the U.S. and the U.K. and to ensure the effective exchange of these research findings among academics and practitioners from each of the three countries.

### CMHC Project Officer:

D. Chamberland

### Division:

Socio-Economic Policy and  
Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

### Contractor:

Fannie Mae  
Office of Housing Policy  
Research  
3900 Wisconsin Avenue N.W.  
Washington, D.C.  
20016

### CIDN:

1206 0200001

## Ongoing Projects/Projets en cours

### A GUIDE TO IMPROVING HOUSING AFFORDABILITY

**Objective:**

The development of a prototype issue of a guide that will enable housing producers and providers to review, examine and assess proven development, design and financing strategies that improve housing affordability with the objective of implementing them. The guide will use CD-ROM technology for the storing and retrieval of information.

**CMHC Project Officer:**

F. Grammenos

**Division:**

Technical Policy and Research Division

**Contractor:**

McGill University  
815 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

**CIDN:**

0889 0200002

### PREPARATION OF SYMPOSIUM PROCEEDINGS: HOUSING AFFORDABILITY IN A CHANGING SOCIETY

**Objective:**

To prepare the proceedings report, including a highlights document, verbatim transcripts, and final proceedings, for the CMHC symposium entitled "Housing Affordability in a Changing Society" held on November 2, 1995.

**CMHC Project Officer:**

J. Mugford

**Division:**

Strategic Planning Division

**Contractor:**

Communications Dynamics  
7-8 Tormey Street  
Ottawa, Ontario  
K1N 5V8

**CIDN:**

1491 0100002

### SHELTER AFFORDABILITY AND HOUSING NEEDS OF CANADIAN FOOD BANK CLIENTS

**Objective:**

Will examine the relationship between food banks and housing, and produce a profile of the typical food bank client in Winnipeg, Manitoba, in regard to shelter needs and other socio-demographic variables.

**CMHC Project Officer:**

J. Engeland

**Division:**

Socio-Economic Policy and Research Division  
External Research Program

**Contractor:**

Professor Jeff Sloan  
Manitoba Nursing Research Institute  
Faculty of Nursing  
University of Manitoba  
Winnipeg, Manitoba  
R3T 2N2

**CIDN:**

1099 0200001

### UPDATE OF REPORT "REGULATORY MECHANISMS TO FACILITATE THE PRODUCTION OF AFFORDABLE HOUSING"

**Objective:**

To update the report "Regulatory Mechanisms to Facilitate the Production of Affordable Housing" and in particular to address the developments that have occurred in Ontario and B.C. since the original report was produced.

**CMHC Project Officer:**

B. Gray

**Division:**

Socio-Economic Policy and Research Division

**Contractor:**

Richard Drdla Associates  
415 1/2 Wellesley Street East  
Toronto, Ontario  
M4X 1H5

**CIDN:**

0892 0201001

### A COMPARATIVE STUDY OF IMMIGRANT HOUSING IN MONTREAL AND TORONTO

**Objective:**

To address the linkages between housing, neighbourhoods and social networks among visible minority immigrant groups living in metropolitan Montreal and Toronto.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

**Contractor:**

Brian K. Ray  
McGill University  
805 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

**CIDN:**

1283 0200001

### IMMIGRANT HOUSING CHOICES, 1991

**Objective:**

To update and extend a recently completed study of immigrant housing choices based on 1986 census data. This study will describe differences between the housing choices of immigrants and non-immigrants in 1991 and compare findings to those of the previous study. 1986 and 1991 census data will be used to trace changes over time in the behaviour of individual immigrant cohorts. Through focus groups and statistical analysis of 1991 census data, the research will attempt to identify factors underlying observed differences between immigrants and non-immigrants.

**CMHC Project Officer:**

R. Lewis

**Division:**

Socio-Economic Policy and  
Research Division

**Contractor:**

Lapointe Consulting Inc.  
311 Markham Street  
Toronto, Ontario  
M6G 2K8

**CIDN:**

0854 0201001  
0854 0200002



## Ongoing Projects/Projets en cours

### ASSESSMENT OF THE SHORT-TO-MEDIUM TERM EXPORT GROWTH PROSPECTS FOR CANADA'S HOUSING INDUSTRY

#### Objective:

Production of the information needed to ascertain the housing industry's prospects for being designated an export priority sector; examination of the results obtained from specific activities which might be undertaken to support its exports.

#### CMHC Project Officer:

P. Spurr

#### Division:

International Relations  
Division

#### Contractor:

The Bayswater Consulting  
Group Inc.  
82 Bayswater Avenue  
Ottawa, Ontario  
K1Y 2E9

#### CIDN:

1523 0900001

### CANADIAN HOUSING PRODUCTS AND SERVICES FOR CHINA

#### Objective:

To identify potential opportunities for Canadian manufactured products and services for the Beijing housing market.

#### CMHC Project Officer:

R. Duncan

#### Division:

Technical Policy and  
Research Division

#### Contractor:

McGill University  
School of Architecture  
815 Sherbrooke Street West  
Montréal, Québec  
H3A 2K6

#### CIDN:

1263 0300001

### DEVELOPMENT OF A HOUSING MARKET STUDY IN CHINA

#### Objective:

To develop a housing market study that can be utilized by the Canadian housing industry to: pursue the commercial opportunities in China; provide housing exporters with guidelines and a strategy for operating in China; develop a data bank that can be updated and easily accessible to the entrepreneurs pursuing this market.

#### CMHC Project Officer:

A. Lucciola

#### Division:

International Relations  
Division

#### Contractor:

The Delta Partners  
32 Burrows Road  
Ottawa, Ontario  
K1J 6E6

#### CIDN:

1433 0900005

### DEVELOPMENT OF A RESEARCH METHODOLOGY FOR THE PROPOSED HOUSING MARKET STUDY IN CHINA

#### Objective:

To develop a methodology that can be used to research and represent in publishable form Canada's capacity to: pursue the commercial opportunities in China for the Canadian housing industry; and provide housing exporters with guidelines and a strategy for operating in China.

#### CMHC Project Officer:

A. Lucciola

#### Division:

International Relations  
Division

#### Contractor:

Chreod Limited  
Suite 200  
111 Sparks Street  
Ottawa, Ontario  
K1P 5B5

#### CIDN:

1433 0900003

### EXPORT STRATEGIES OF CANADA'S COMPETITORS IN INTERNATIONAL HOUSING MARKETS

#### Objective:

To examine the housing export capabilities of Canada's principal competitors in international housing markets as well as the strategic approaches that these countries use to do business internationally.

#### CMHC Project Officer:

G. Duc

#### Division:

International Relations  
Division

#### Contractor:

Scanada Consultants  
Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

#### CIDN:

1369 0900001

**METHODS AND DATA FOR  
ASSESSING OPPORTUNITIES  
FOR CANADA'S HOUSING  
INDUSTRY IN THE UNITED  
STATES OF AMERICA**

**Objective:**

To produce a concise report on how a study of opportunities in the USA for the Canadian housing industry should be conducted for the Corporation.

**CMHC Project Officer:**

P. Spurr

**Division:**

International Relations  
Division

**Contractor:**

Centre for International  
Business Studies  
École des hautes études  
commerciales  
Université de Montréal  
5255 avenue DeCelles  
Montréal (Québec)  
H3T 1V6

**CIDN:**

1504 0900001

**SOURCES OF SUPPORT FOR  
CANADA'S HOUSING  
EXPORTERS**

**Objective:**

To develop a directory of federal, provincial and other resources that can potentially support the strategic directions that are being proposed for Canada's housing industry.

**CMHC Project Officer:**

G. Duc

**Division:**

International Relations  
Division

**Contractor:**

Hill and Knowlton (Canada)  
Inc.  
55 Metcalfe Street  
Suite 1300  
Ottawa, Ontario  
K1P 6L5

**CIDN:**

1485 0900001

## Ongoing Projects/Projets en cours

### ALTERNATIVES FOR THE PLANNING AND DESIGN OF HOUSING IN ST. JOHN'S

**Objective:**

To explore alternatives for the planning and design of new low and medium density housing in St. John's, Newfoundland.

**CMHC Project Officer:**

R. Rana

**Division:**

Socio-Economic Policy and Research Division  
External Research Program

**Contractor:**

Robert Mellin, Architect  
89 Barnes Road  
St. John's, Newfoundland  
A1C 3X5

**CIDN:**

1095 0200001

### 4D ENVIRONMENTAL SIMULATION TO EVALUATE DESIGN ALTERNATIVES FOR MEDIUM DENSITY HOUSING

**Objective:**

To document and present sustainable planning and design alternatives for an existing subdivision in Calgary using ACV technology, and to use the generated digitized images for testing consumer receptivity of the alternatives.

**CMHC Project Officer:**

F. Grammenos

**Division:**

Socio-Economic Policy and Research Division  
External Research Program

**Contractor:**

Richard Perron  
Department of Landscape Architecture  
University of Manitoba  
Winnipeg, Manitoba  
R3T 2N2

**CIDN:**

1279 0200001

### HABITATION ET FLEXIBILITÉ AU CANADA : BILAN 1991

**Objet :**

Construire une grille d'analyse permettant de dresser une typologie des solutions apportées par les architectes; et faire un rapport de synthèse proposant un bilan global des perspectives de résolution du problème de flexibilité dans un projet d'habitation.

**Agent de projet pour la SCHL :**

M. Macpherson

**Division :**

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

**Contractant :**

Annie Chelin  
5780, rue Hutchison  
Outremont (Québec)  
H2V 4B6

**NIC :**

0911 0200001

### HABITATIONS NOUVELLES EN MILIEU ANCIEN

**Objet :**

La recherche porte sur les problèmes de design que posent l'implantation et l'intégration de nouvelles habitations dans les milieux résidentiels canadiens de facture plus ou moins homogène ou dans leurs zones limitrophes. Par extension, elle s'intéresse à toute opération de construction nouvelle en milieu ancien, qu'il s'agisse de recyclages, de rénovations ou d'agrandissements.

**Agent de projet pour la SCHL :**

M. Macpherson

**Division :**

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

**Contractant :**

Pierre-Richard Bisson  
Université de Montréal  
Case Postale 6128  
Succursale Centre-ville  
Montréal (Québec)  
H3C 3J7

**NIC :**

1450 0200001

## **MONTREAL : UNE GRANDE TRADITION D'HABITAT À DENSITÉ MOYENNE**

### **Objet :**

Ce projet veut mettre en lumière les processus d'adaptation du logement et des types de bâtiments à travers les diverses phases de l'évolution des formules "plex" (duplex, triplex, quatre-plex, cinq-plex ...) à Montréal au cours de quatre cycles de constructions entre 1866 et 1935.

### **Agent de projet pour la SCHL :**

M. Desbiens

### **Division :**

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

### **Contractant :**

David B. Hanna  
Université du Québec à Montréal  
Case postale 8888  
Succursale Centre-ville  
Montréal (Québec)  
H3C 3P8

### **NIC :**

1455 0200001

## **PASSIVE SOLAR HOUSE DESIGNS FOR CANADA**

### **Objective:**

To identify relevant literature and design tools, analyze and interpret data in order to update the existing CMHC publication on passive solar house designs.

### **CMHC Project Officer:**

F. Grammenos

### **Division:**

Technical Policy and Research Division

### **Contractor:**

Leslie Jones & Associates Ltd.  
319 Catherine Street  
Ottawa, Ontario  
K1R 5T4

### **CIDN:**

1241 0200001

## **VILLE ST-LAURENT REVISITED: WARTIME HOUSING AND ARCHITECTURAL CHANGE, 1942-92**

### **Objective:**

To study a solution offered by the wartime housing effort and to test its lessons for today's housing problems.

### **CMHC Project Officer:**

F. Grammenos

### **Division:**

Socio-Economic Policy and Research Division  
External Research Program

### **Contractor:**

Dr. Annmarie Adams  
School of Architecture  
McGill University  
815 Sherbrooke Street West  
Montreal, Quebec  
H3A 2K6

### **CIDN:**

1083 0200001

## **VIRTUAL REALITY AND ITS POTENTIAL USES IN THE HOUSING SECTOR**

### **Objective:**

To assess potential opportunities to apply virtual reality technology in Canadian urban planning and the housing sector. Particular attention will be given to the potential use of virtual reality in designing sustainable communities and accessible housing for the disabled and seniors. The final report will provide an overview of virtual reality technology and discuss examples of existing applications relevant to housing and urban development.

### **CMHC Project Officer:**

D. Leong

### **Division:**

Socio-Economic Policy and Research Division  
Centre for Future Studies in Housing and Living Environments  
Experts in Residence Program

### **Contractor:**

John Thurston  
26 Standford Private  
Ottawa, Ontario  
K1T 3J3

### **CIDN:**

1015 0202003



# HOUSING FORECASTING AND DEMAND/ PRÉVISION ET DEMANDE DE LOGEMENTS

## Ongoing Projects/Projets en cours

### **CHILDREN LIVING IN TWO HOMES: JOINT CUSTODY AND DUAL RESIDENCES**

#### **Objective:**

Through a literature review and a survey of families, this study will examine the overall magnitude and possible longer term implications of joint custody agreements for housing demand and the use and design of dwellings.

#### **CMHC Project Officer:**

D. Chamberland

#### **Division:**

Socio-Economic Policy and  
Research Division  
Centre for Future Studies in  
Housing and Living  
Environments  
Experts in Residence Program

#### **Contractor:**

Mr. Martin Wexler  
45, rue Chesterfield  
Westmount (Québec)  
H3Y 2M4

#### **CIDN:**

1015 0201001

### **GENDER DIFFERENCES IN HOUSING DEMAND**

#### **Objective:**

The study will identify and measure the difference in housing demand by men and women. The objective guiding the research plan is the search for the unique effects of changing employment and income opportunities for women on the housing behaviour. The work will involve "potential" as well as "permanent" income indexes by age group.

#### **CMHC Project Officer:**

T. Mitchell

#### **Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

#### **Contractor:**

Andrejs Skaburskis  
School of Urban and Regional  
Planning  
Queen's University  
Kingston, Ontario  
K7L 3N6

#### **CIDN:**

1465 0200001

# ÉVOLUTION DE LA DEMANDE DE LOGEMENT ET STABILITÉ DES PRIX IMPLICITES DES ATTRIBUTS RÉSIDENTIELS; UNE COMPARAISON 1986-1991

## Objet :

La recherche consiste à étudier les modifications survenues entre 1986 et 1991 dans la structure de la demande de logement des ménages de la région de Québec. Le modèle hédonique «RÉSIVALU», mis au point il y a quelques années, a permis de tracer un portrait détaillé des préférences des ménages en matière de logement pour la période 1986-1987, et ce pour l'ensemble des sous-marchés de propriétaires-occupants sur le territoire de la Communauté urbaine de Québec (CUQ). Cette étude aura recours à un système d'information géographique en voie d'élaboration pour le territoire de la CUQ qui s'intégrera au modèle hédonique RÉSIVALU à régression multiple. Elle comparera la carte des préférences des ménages de 1986 à celle de 1991 et examinera les changements qui ont marqué les prix implicites des attributs des prix des maisons. L'étude permettra en outre de mesurer les déplacements fiscaux entre municipalités de la CUQ, les modifications des structures socio-économiques ainsi que l'étalement urbain.

## Agent de projet pour la SCHL :

J.F. Dion

## Division :

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

## Contractant :

François Desrosiers  
Professeur titulaire  
Université Laval  
Faculté des sciences de l'administration  
Sainte-Foy (Québec)  
G1K 7P4

## NIC :

1275 0200001

# MATCHING BUYERS AND SELLERS IN THE RESALE HOUSING MARKET

## Objective:

Matching buyers and sellers in the resale housing market.

## CMHC Project Officer:

P. White

## Division:

Socio-Economic Policy and Research Division  
External Research Program

## Contractor:

Mr. Christopher T. Ragan  
Department of Economics  
McGill University  
855 Sherbrooke Street West  
Montreal, Quebec  
H3A 2T7

## CIDN:

1098 0200001

# SEVEN SOURCES OF CHANGE IN VANCOUVER HOUSING PRICE

## Objective:

To gain fundamental empirical insights into the sources of change in residential property values in the Vancouver area through detailed analysis and comparison of census and real estate data.

## CMHC Project Officer:

H. Pastrick

## Division:

Socio-Economic Policy and Research Division  
External Research Program

## Contractor:

Dr. Eric J. Heikkila  
University of British Columbia  
2053 Main Mall  
Vancouver, British Columbia  
V6T 1Z2

## CIDN:

1456 0200001

## Ongoing Projects/Projets en cours

### **INVENTORY OF RESEARCH AND INFORMATION PRODUCTS OF MEMBERS OF THE NATIONAL HOUSING RESEARCH COMMITTEE**

**Objective:**

To develop a computerized inventory of research and information products of members of the National Housing Research Committee to facilitate access to information on ongoing and planned housing research activities in Canada.

**CMHC Project Officer:**

T. McGregor

**Division:**

Strategic Planning Division

**Contractor:**

Scanada Consultants  
Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

**CIDN:**

1238 0200001  
1238 0201001

### **SYMPOSIUM INTERNATIONAL RELATIF AUX ENQUÊTES SUR L'HABITATION**

**Objet :**

D'évaluer les tendances passées et actuelles en ce qui a trait aux enquêtes sur l'habitation et de trouver de nouvelles théories et méthodes.

**Agent de projet pour la SCHL :**

J. Angus

**Division :**

Division des politiques et de la recherche en matière socio-économique

**Contractant :**

Université de Laval  
Québec (Québec)  
G1K 7P4

**NIC :**

1493 0200001

### HOUSING RELATED SAFETY AND SECURITY STANDARDS

#### Objective:

To identify the work being done by key players both nationally and internationally who have been involved in the development of housing-related safety and security standards based on 'crime prevention through environmental design' (CPTED) principles and to produce a synopsis of this work done over the last 10 years. The final report will include a literature review and the results of a survey of CPTED practitioners.

#### CMHC Project Officer:

J. Taggart

#### Division:

Socio-Economic Policy and Research Division

#### Contractor:

B.C. Coalition for Safer Communities and Secure Design  
C/O The People's Law School  
150-900 Howe Street  
Vancouver, British Columbia  
V2Z 2M4

#### CIDN:

1299 0100002

### THE PREVENTION OF CRIME

#### Objective:

To harness internationally the know-how to improve the quality of life in and around housing communities by reducing crime and violence; and to prepare documentation on the most promising approaches for dissemination within Canada.

#### CMHC Project Officer:

J. Taggart

#### Division:

Socio-Economic Policy and Research Division

#### Contractor:

International Centre for the Prevention of Crime  
380 Saint-Antoine Avenue  
West  
Office 3200  
Montreal, Quebec  
H2Y 3X7

#### CIDN:

1506 0100001



# HUMAN SETTLEMENTS/ÉTABLISSEMENTS HUMAINS

## Ongoing Projects/Projets en cours

### VANCOUVER COLLOQUIUM

**Objective:**

To produce proceedings from the colloquium on "The Road to Istanbul: From Habitat I to Habitat II", held in Vancouver from October 26 to 28, 1995.

**CMHC Project Officer:**

J. Smugler

**Division:**

International Relations  
Division

**Contractor:**

Simon Fraser University  
Burnaby, British Columbia  
V5A 1S6

**CIDN:**

1520 0900001

### **AN ASSESSMENT OF MUNICIPAL INFRASTRUCTURE INFORMATION NEEDS: FINAL PROJECT REPORT.**

*Prepared by Chris Gates and Judith Ramsay, REIC Consulting Ltd. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

The purpose of this project was to identify information gaps and examine issues related to the quality and accessibility of information with respect to the management, financing, planning and technological aspects of municipal infrastructure. The project was composed of three tasks: a survey of municipal infrastructure professionals; a review of possible information techniques; and a focus group meeting of a cross-section of stakeholders to review the findings of the survey.

The information gathering and dissemination habits of the focus group tended to reflect the results of the survey as a whole. The principal information sources that municipal infrastructure professionals rely on are publications, conferences and consultations with other municipal colleagues. However, in one key area, the focus group participants indicated a willingness to accelerate the use of computers and computerized information networks. It was agreed that the Internet is likely to be the best long-term vehicle for the dissemination of topical, current information on all municipal issues, including infrastructure.

The report suggests that ICURR (Intergovernmental Committee on Urban and Regional Research) might be able to provide a web site on the Internet which could act as a one-window gateway or main index to all municipal services, starting from the generic and subdividing down to the specific. In this way, ICURR could then offer its web site to all the other municipal information providers as a kind of on-line Internet clearinghouse. An alternative option that was suggested would see discussion groups attached to specific issues on an Internet web site bulletin board where interested parties could quickly access the information they are trying to find or, alternatively, state their problem and see if there are any solutions. To test the feasibility of whether this service would work, it was recommended that CMHC, which provides 50 percent of ICURR's funding, invite the major municipal information suppliers to a similar roundtable discussion to explore the idea in more detail.

### **ATELIER SUR LES INFRASTRUCTURES MUNICIPALES ET L'HABITATION, OTTAWA (ONTARIO), LES 22 ET 23 MARS 1995 : COMPTE RENDU.**

*Préparé par HLR Publishing Group. Ottawa : Société canadienne d'hypothèques et de logement, 1995.*

La Société canadienne d'hypothèques et de logement a parrainé un atelier sur la question des infrastructures municipales et de l'habitation qui a eu lieu à l'hôtel Westin d'Ottawa les 22 et 23 mars 1995. Cet atelier visait surtout à examiner les questions de nature économique, environnementale, sociale et technique touchant les infrastructures canadiennes dans l'optique de leur état, de leur gestion et de leur financement. La première journée de l'atelier a été consacrée à l'évaluation de l'état des infrastructures et à l'examen du rapport entre les nouvelles formes d'aménagement des collectivités et les infrastructures municipales. La deuxième journée, les participants ont examiné divers genres de partenariats publics-privés destinés à financer les infrastructures municipales ainsi que la diffusion de l'information concernant les infrastructures et les façons d'améliorer les communications dans ce secteur. Le programme de l'atelier est présenté dans l'annexe.

## INFRASTRUCTURE/INFRASTRUCTURE

Des documents de base ont été commandés pour servir de point de départ aux discussions. À l'atelier, la présentation de ces documents a été suivie de débats en sous-groupes, de périodes de questions et de discussions générales. Ce compte rendu résume chacune des séances de l'atelier.

NOTE: Also available in English under the title: Workshop on Municipal Infrastructure and Housing, Ottawa, Ontario, March 22-23, 1995: Proceedings.

### **COÛTS DE L'INFRASTRUCTURE ASSOCIÉS AUX APPROCHES TRADITIONNELLES ET NOUVELLES EN MATIÈRE D'AMÉNAGEMENT : RAPPORT SOMMAIRE.**

*Préparé par Essiambre Phillips Desjardins Associates Ltd., en collaboration avec J.L. Richards & Associates Limited, C.N. Watson Associates Ltd., et A. Nelessen Associates Inc. Préparé pour la Société canadienne d'hypothèques et de logement et la Municipalité régionale d'Ottawa-Carleton. Ottawa : SCHL, 1995.*

Ce document est le résumé d'un rapport intitulé "Infrastructure Costs Associated with Conventional and Alternative Development Patterns" récemment rédigé pour la Société canadienne d'hypothèques et de logement (SCHL) et la Municipalité régionale d'Ottawa-Carleton (MROC).

L'objectif de l'étude est d'évaluer et de comparer la rentabilité de deux approches d'aménagement communautaire : (i) une approche conventionnelle d'aménagement de banlieue et (ii) une approche d'aménagement plus dense, à utilisation mixte, planifiée selon les principes du nouvel urbanisme. L'analyse examine les coûts à long terme du «cycle de vie» de diverses infrastructures linéaires et divers services communautaires et fait la distinction entre les coûts publics et les coûts privés (c.-à-d. ceux de l'entrepreneur). Le site se compose d'un seul grand quartier dans la collectivité de Barrhaven délimité par trois routes de sortie et un chemin de fer.

Les résultats les plus importants de l'étude sont les suivants :

- L'infrastructure du plan de rechange, caractérisée par un aménagement plus dense et une plus large répartition des genres de maisons et d'utilisations des terrains, est plus rentable pour les secteurs public et privé. Le coût global total (sur une période de 75 ans) de l'infrastructure est d'environ 11 000 \$ par logement dans le plan de rechange, soit 8,8 % de moins que dans le plan traditionnel.
- La réduction des coûts de mise en place de l'infrastructure, d'environ 5 300 \$ par logement, représente la plus grande économie de coût global dans le plan de rechange. Les éléments d'infrastructure mis en place par l'entrepreneur (les routes, l'éclairage des rues, les services souterrains et les parcs) représentent environ 60 % de ces économies (plus de 3 000 \$ par logement).
- En commençant par l'économie de coût global la plus importante réalisée dans les services selon le plan de rechange, on constate une économie de 3 054 \$ pour les routes, de 1 499 \$ pour la gestion des eaux d'écoulement, de 1 330 \$ pour les services de transport, de 1 088 \$ pour l'aqueduc, de 1 016 \$ pour le service de police et de 975 \$ pour les égouts sanitaires.

NOTE: Also available in English under the title: Infrastructure Costs Associated with Conventional and Alternative Development Patterns: Summary Report.



## **INFRASTRUCTURE COSTS ASSOCIATED WITH CONVENTIONAL AND ALTERNATIVE DEVELOPMENT PATTERNS.**

*Prepared by Essiambre Phillips Desjardins Associates Ltd., in association with J.L. Richards & Associates Ltd., C.N. Watson Associates Ltd. and A. Nelessen Associates Inc. Prepared for Canada Mortgage and Housing Corporation and the Regional Municipality of Ottawa Carleton. Ottawa: CMHC, 1995, 2 volumes.*

### **Vol. 1: Final Report; Vol. 2: Summary Report**

The purpose of the study is to assess and compare the cost effectiveness of two patterns of community development: (i) a conventional suburban development pattern; and (ii) a mixed-use, more compact development, planned according to the principles of New Urbanism. The analysis considers the long-term "life-cycle" costs of various linear infrastructure and community services, and differentiates between public and private (i.e. developer) costs. The test site is one large neighbourhood in the community of Barrhaven bounded by three arterial roads and a railroad.

The most significant findings of the study are as follows:

- The infrastructure in the alternative plan, featuring a denser development and a broader mix of house types and land uses, is more cost effective for both the public and private sectors. The total life-cycle cost (over a 75-year period) of the infrastructure in the alternative plan is approximately \$11,000 per unit, or 8.8% less than in the conventional plan.
- A reduction in infrastructure emplacement costs of approximately \$5,300 per unit represents the largest life-cycle cost savings in the alternative plan. Developer emplaced infrastructure (roads, street lights, piped services and parks) account for roughly 60% of these savings (over \$3,000 per unit).
- Ranking the per unit life-cycle cost savings by service component, the largest life-cycle cost savings in the alternative plan are as follows: roads (\$3,054); followed by stormwater management (\$1,499); transit (\$1,330); water (\$1,088); policing (\$1,016); and sanitary sewers (\$975).

NOTE : Aussi disponible en français sous le titre : Coûts de l'infrastructure associés aux approches traditionnelles et nouvelles en matière d'aménagement : rapport sommaire.

## **WORKSHOP ON MUNICIPAL INFRASTRUCTURE AND HOUSING, OTTAWA, ONTARIO, MARCH 22-23, 1995: PROCEEDINGS.**

*Prepared by the HLR Publishing Group. Ottawa: Canada Mortgage and Housing Corporation, 1995.*

A workshop sponsored by Canada Mortgage and Housing Corporation on the subject of municipal infrastructure and housing was held at the Westin Hotel in Ottawa on March 22 and 23, 1995. The main objective of the workshop was to examine economic, environmental, social, and technical issues related to the state of Canadian infrastructure, its management, condition, and financing. The first day of the workshop focused on issues related to the measurement of the condition of infrastructure and looked at alternative community planning approaches and the relationship with municipal infrastructure. The second day examined various public/private partnership arrangements to finance municipal infrastructure and looked at issues related to the dissemination of infrastructure-related information and ways to improve communications in this area.

Papers had been commissioned to form the basis of the discussions. At the workshop, the presentation of papers was followed by panel discussions, question periods, and general discussions. These proceedings provide a summary of each session at the workshop.

NOTE : Aussi disponible en français sous le titre : Atelier sur les infrastructures municipales et l'habitation, Ottawa (Ontario) les 22 et 23 mars 1995 : compte rendu.



## Ongoing Projects/Projets en cours

### **INNOVATIVE INFRASTRUCTURE: MUNICIPAL EXPERIENCES**

#### **Objective:**

To present a very brief historical outline of the evolution of the design of the dominant Canadian municipal infrastructure systems and materials, to provide an examination of the technical causes for a range of failures in some of these systems; to place into context an identification of technologies to repair these failing systems; and to carry out a survey to identify durable repair technologies and to provide case studies on a number of examples which have been locally acceptable and affordable.

#### **CMHC Project Officer:**

A. Houston

#### **Division:**

Technical Policy and Research  
Division

#### **Contractor:**

REIC Ltd.  
15010 Yonge Street  
Aurora, Ontario  
L4G 1M6

#### **CIDN:**

1219 0200001

### DEVELOPMENT OF COMMERCIALLY VIABLE CONCEPTS AND A DESIGN FOR A RESIDENTIAL FRAMING SYSTEM FOR A MONOCOQUE HOUSE

#### Objective:

The development of commercially viable engineered structural concepts and a design for a monocoque framing system for residential structures which can be adopted by home builders for the construction of houses on unstable soils; monitoring of the demonstration of the system in a house construction project and a report of the results of the work for CMHC.

#### CMHC Project Officer:

R. Duncan

#### Division:

Technical Policy and Research Division

#### Contractor:

Gower, Yeung & Associates Ltd.  
615 Eighth Street  
Suite 201  
New Westminster, British Columbia  
V3M 3S3

#### CIDN:

0657 0300001

### MONOCOQUE CAVITY RIGID PANEL FOR WALL AND ROOF CONSTRUCTION

#### Objective:

To finalize the design of monocoque wall and roof panels and the locking joint assemblies for these panels, and produce prototype wall and roof panels for testing.

#### CMHC Project Officer:

M. Macpherson

#### Division:

Socio-Economic Policy and Research Division  
Housing Technology Incentives Program

#### Contractor:

Ray-Co-Tech Inc.  
30, rue Des Frenes  
Bromont (Québec)  
J0E 1L0

#### CIDN:

1270 0200001

### THREE DECADES OF INNOVATION IN HOUSING TECHNOLOGY

#### Objective:

Prepare a manuscript to document and illustrate the evolution of Canadian housing technology, design and planning during the period 1966-1996, to complement the publication "Two Decades of Innovation in Housing Technology 1946-1965" prepared in 1994.

#### CMHC Project Officer:

P. Archer

#### Division:

Technical Policy and Research Division

#### Contractor:

Scanada Consultants Ltd.  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

#### CIDN:

1418 0300001

## Ongoing Projects/Projets en cours

### ASSESSMENT OF THE CAPACITY TO USE STOCHASTIC MODELS IN BUILDING LIFE-CYCLE COSTING

#### Objective:

The study is an evaluation of how well easily collected, financial data reported on audited statements and supporting documentation about housing that is targeted towards low and moderate income households can be used in conjunction with well known probabilistic models to estimate long term maintenance, repair and replacement costs.

#### CMHC Project Officer:

W. Webster

#### Division:

Socio-Economic Policy and  
Research Division  
External Research Program

#### Contractor:

Aron Spector  
Ark Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

#### CIDN:

1100 0200001

## Ongoing Projects/Projets en cours

### A STRUCTURAL ANALYSIS OF THE CANADIAN AND INTERNATIONAL MANUFACTURED HOUSING INDUSTRY

#### Objective:

To enhance the international competitiveness of the Canadian manufactured housing industry.

#### CMHC Project Officer:

T. McGregor

#### Division:

Strategic Planning Division

#### Contractor:

Canadian Manufactured  
Housing Association  
150 Laurier Avenue West  
Suite 200  
Ottawa, Ontario  
K1P 5J4

#### CIDN:

1290 0200001



## Ongoing Projects/Projets en cours

### MOISTURE, MOULD, YOUR HOUSE AND YOU PUBLICATION

**Objective:**

Review the backgrounder and other resource materials. Assemble and convene a focus group of possible consumer users, to determine the best format, style and content of the publication. Finalize the audience profile and outline for the publication. Develop and edit the manuscript.

**CMHC Project Officer:**

J. White

**Division:**

Technical Policy and Research  
Division

**Contractor:**

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

**CIDN:**

1030 0200001

### MOISTURE PROBLEMS IN FINISHED BASEMENTS

**Objective:**

To establish the incidence of finished basements with moisture problems, mould, or material degradation; finishing techniques or house types that seem immune to such problems; and typical wood stud moisture levels.

**CMHC Project Officer:**

D. Fugler

**Division:**

Technical Policy and Research  
Division

**Contractor:**

Scanada Consultants Limited  
436 MacLaren Street  
Ottawa, Ontario  
K2P 0M8

**CIDN:**

1386 0200004

### PROTECTING GYPSUM SHEATHING IN INSULATED STEEL-STUD WALLS

**Objective:**

To determine which types of wall arrangements perform the best with respect to moisture control under similar boundary conditions.

**CMHC Project Officer:**

J. Rousseau

**Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

**Contractor:**

Dr. Kim Pressnail  
Assistant Professor  
Dept. of Civil Engineering  
University of Toronto  
35 St. George Street  
Toronto, Ontario  
M5S 1A4

**CIDN:**

1282 0200001

# MORTGAGES AND HOUSING FINANCE/ HYPOTHÈQUES ET LOGEMENT – FINANCES

## Ongoing Projects/Projets en cours

### FEASIBILITY STUDY ON METHODOLOGY FOR MEASURING DISCRIMINATION IN RESIDENTIAL MORTGAGE LENDING

**Objective:**

To identify alternative approaches to measuring discrimination in residential mortgage lending, and determine the feasibility of these different methods. Each option must be distinct from the others and be practicably feasible against the backdrop of the critical success factors within the Canadian context. The report will make a recommendation to CMHC providing a detailed action plan for implementing the recommended approach.

**CMHC Project Officer:**

J. Mugford

**Division:**

Strategic Planning Division

**Contractor:**

Prairie Research Associates  
Inc.  
111 Pulford Street  
Winnipeg, Manitoba  
R3L 0E4

**CIDN:**

1352 0100001

### IMPLEMENTATION OF A NEW MORTGAGE SURVEY OF LENDERS

**Objective:**

To design the final version of the questionnaire and the definition list of the new market survey of lenders; establish the methodology and the format of data to be transferred to the Corporation by the lenders participating in the survey. The final report should include a summary of key findings, recommendations for the transfer of data, and a summary of individual interviews.

**CMHC Project Officer:**

M. Pellerin

**Division:**

Market Analysis Centre

**Contractor:**

Mary McDonough Research  
Associates  
151 Yonge Street  
Suite 1210  
P.O. Box 7  
Toronto, Ontario  
M5C 2W7

**CIDN:**

1482 1000001

### THE OPTIMAL MORTGAGE TERM SELECTION

**Objective:**

To conduct a study that will identify the conditions under which mortgagors can reasonably choose a mortgage term that minimizes interest costs.

**CMHC Project Officer:**

M. Pellerin

**Division:**

Market Analysis Centre

**Contractor:**

Mary McDonough Research  
Associates  
151 Yonge Street  
Suite 1210  
P.O. Box 7  
Toronto, Ontario  
M5C 2W7

**CIDN:**

1525 1000001

**MUNICIPAL GOVERNMENT AND FINANCE/  
ADMINISTRATION MUNICIPALE ET FINANCES**

**Ongoing Projects/Projets en cours**

**HANDBOOK ON MUNICIPAL  
ENVIRONMENTAL PRICING**

**Objective:**

To produce the ICLEI handbook on municipal environmental pricing which will provide a blueprint for reforming municipal economic instruments.

**CMHC Project Officer:**

J. Smugler

**Division:**

International Relations  
Division

**Contractor:**

International Council for  
Local Environmental Initiatives  
City Hall, East Tower  
8th Floor  
Toronto, Ontario  
M5H 2N2

**CIDN:**

1252 0900001

#### **MAXIMIZING COMMUNITY BENEFITS FROM SELF-HELP HOUSING.**

*Prepared in association with Terpstra and Associates Limited. Prepared for Policy Development Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

A study was undertaken to determine how the benefits of self-help housing could be maximized in a remote native community (Sheshatshui, Labrador) and how the findings could be applied to other remote communities. The work consisted of a consultation with community members, an assessment of housing-related skills within the community, and the development of a strategy to promote housing activity. As a result of this work, a generic "how-to" manual was produced for use by other remote communities interested in self-help housing programs.

The manual explains how to develop an inventory of the skills and resources within the community and assesses market opportunities by looking at the advantages and disadvantages of various markets. The four main types of markets considered are: new and on-going housing; renovation, maintenance and repairs; commercial buildings and basic infrastructure; and construction outside the community. Finally, the manual provides instructions for estimating labour supply and demand and identifying labour gaps and surpluses. Once these steps have been completed, the community can begin to draw up a specific action plan.

#### **PARTAGER LES RÉUSSITES DU LOGEMENT AUTOCHTONE : FAITS MARQUANTS DU SYMPOSIUM DES PRIX D'EXCELLENCE EN HABITATION DE LA SCHL.**

*Ottawa : Société canadienne d'hypothèques et de logement, 1995 (LNH 6822).*

NOTE: Disponible par la poste : EDM/SCHL, C.P. 3077, Markham ON L3R 6G4, Tél. : 1-800-463-SCHL. \*\* Prix: 9,95 \$ + TPS + frais d'expédition.

Le Symposium des Prix d'excellence en habitation de la SCHL tenu à Kelowna (C.-B.) du 4 au 6 décembre 1994 portait sur le thème «Partager les réussites du logement autochtone.» L'objectif premier du Symposium était de mettre en commun l'information sur l'évolution du logement autochtone, pour que les délégués puissent revenir chez eux avec des idées répondant aux besoins de leurs collectivités respectives. Une grande partie de l'information avait trait aux idées et aux projets primés en vertu des Prix d'excellence en habitation 1994 de la SCHL.

Les gagnants de cinq prix et de dix mentions honorables ont été annoncés lors du Symposium, à l'occasion de la cérémonie de remise des prix. En plus de la cérémonie de remise des prix, les 200 délégués représentant des collectivités autochtones de tout le Canada ont reçu de l'information grâce à une série d'ateliers qui portaient sur la planification de projets et le perfectionnement professionnel, la planification communautaire réussie, la formation en informatique requise, l'optimisation des avantages économiques, les moyens d'allier la culture autochtone à l'architecture contemporaine et comment répondre aux besoins de logement des aînés et des handicapés.

NOTE: Also available in English under the title: *Sharing Successes in Native Housing: Highlights of the CMHC Housing Awards Symposium on Aboriginal Housing* (NHA 6821).



## **NATIVE PEOPLE/AUTOCHTONES**

### **PROVIDING HOUSING SERVICES FOR OFF-RESERVE ABORIGINAL PEOPLES: ANALYSIS AND RECOMMENDATIONS.**

*Prepared by Congress of Aboriginal Peoples. Ottawa: Canada Mortgage and Housing Corporation, 1995.*

This project of the Congress of Aboriginal Peoples (CAP) was funded by the Canada Mortgage and Housing Corporation as part of the Corporation's contribution to the International Year of the World's Indigenous People.

A component of the initiative was the holding of a workshop of CAP members to discuss potential new directions in ways of delivering and administering housing services for Aboriginal people.

The report begins with an analysis of the socio-demographic characteristics of the off-reserve Aboriginal population. It then summarises the findings of the housing workshop which was a component of this project, and concludes with analysis of current housing problems and recommendations.

#### **Findings of project:**

The report finds that the living conditions of Aboriginal people do not necessarily improve as they move into cities and towns. It finds that there is a wide gap between off-reserve Aboriginal and non Aboriginal people in terms of social and economic achievements.

It compares the on and off-reserve Aboriginal populations in terms of the incidence of social and health problems. It suggests that there is very little difference between them on a range of health problems. In terms of perceived social problems, i.e. suicide, unemployment and alcohol abuse, while these were given greater emphasis by the on-reserve group, relatively large numbers of off-reserve Aboriginal people also report them as serious communal problems.

The report argues for a restoration of funding at increased levels for off-reserve Aboriginal housing, along with the following specific recommendations for housing action:

- (a) self-insurance of the existing housing stock;
- (b) the use of contingency reserves of non-profit groups to generate expanded activity;
- (c) expansion of portfolio management responsibilities wherever possible using fee-for-service arrangements;
- (d) use of Aboriginal capital lending institutions in the funding of new housing stock;
- (e) transfer of existing housing portfolios from the federal government to Aboriginal groups along with necessary resources.

### **SHARING SUCCESSES IN NATIVE HOUSING: HIGHLIGHTS OF THE CMHC HOUSING AWARDS SYMPOSIUM ON ABORIGINAL HOUSING.**

*Ottawa: Canada Mortgage and Housing Corporation, 1995 (NHA 6821).*

NOTE: Available from: EDM/CMHC, P.O. Box 3077, Markham ON L3R 6G4,  
Tel.: 1-880-668-CMHC. Price \$9.95 plus GST and handling charges.

The CMHC Housing Awards Symposium held in Kelowna, B.C. from December 4-6, 1994, carried the theme, "Sharing Successes in Native Housing." The primary objective of the Symposium was to share information on Aboriginal housing developments so that delegates could return home with ideas to help meet the housing needs of their respective communities. Much of the information concentrated on ideas and projects that received recognition through the 1994 CMHC Housing Awards.

Five award winners and 10 honourable mentions were announced at the Symposium awards ceremony. In addition to the awards ceremony, the 200 delegates from Aboriginal communities across Canada received information through a series of workshops which dealt with project planning and skills development, successful community planning, computer training needs, maximizing economic benefits, ways of incorporating Aboriginal culture with contemporary architecture and addressing the housing needs of seniors and people with disabilities.

NOTE : Aussi disponible en français sous le titre : Partager les réussites du logement autochtone : faits marquants du Symposium des Prix d'excellence en habitation de la SCHL (LNH 6822).

## Ongoing Projects/Projets en cours

### ABORIGINAL HOUSING NEEDS

#### Objective:

To provide a profile of the housing characteristics and needs of aboriginal peoples using data from the 1991 Census and post-censal Aboriginal Peoples Survey (APS).

#### CMHC Project Officer:

J. Angus

#### Division:

Socio-Economic Policy and Research Division

#### Contractor:

ARK Research Associates  
165 Hinton Avenue North  
Ottawa, Ontario  
K1Y 0Z9

#### CIDN:

1045 0201002

### ANALYSIS OF MIGRATION AND RESIDENTIAL MOBILITY PATTERNS AMONG CANADA'S ABORIGINAL POPULATION

#### Objective:

To undertake a study examining both the migration and mobility patterns among aboriginal groups. The study will explore the relationship with the urbanization and housing conditions of the aboriginal population.

#### CMHC Project Officer:

D. Chamberland

#### Division:

Socio-Economic Policy and Research Division  
Centre for Future Studies in Housing and Living Environments

#### Contractor:

Royal Commission on Aboriginal Peoples  
427 Laurier Avenue, 6th Floor  
P.O. Box 1993, Station "B"  
Ottawa, Ontario  
K1P 1B2

#### CIDN:

1171 0200001

### EXPLORING THE APPLICATION OF HOMEOWNERSHIP TYPE TENURES BY FIRST NATIONS COMMUNITIES ON-RESERVE

#### Objective:

To explore the impediments, actual practice, and potential for homeownership type tenure forms on-reserve.

#### CMHC Project Officer:

N. Koeck

#### Division:

Delivery and FP Relations Division

#### Contractor:

Patrick Apikan  
415 Kintyre  
Ottawa, Ontario  
K2C 3M9

#### CIDN:

1401 0100005

### THE HOUSING CRISIS IN CANADA'S INUIT COMMUNITIES

#### Objective:

To conduct research on housing issues relevant to Inuit people.

#### CMHC Project Officer:

N. Koeck

#### Division:

Delivery and FP Relations Division

#### Contractor:

Inuit Tapirisat of Canada  
Suite 510  
170 Laurier Avenue West  
Ottawa, Ontario  
K1P 5V5

#### CIDN:

1196 0100001

### HOUSING FOR THE MÉTIS PEOPLE: A NATIONAL STUDY ON THE STATE OF MÉTIS HOUSING

#### Objective:

Examine the state of housing for Métis people in the Métis homeland.

#### CMHC Project Officer:

A. Wellman

#### Division:

Strategic Planning Division

#### Contractor:

Métis National Council  
558 Whitewood Crescent  
Saskatoon, Saskatchewan  
S7J 4L1

#### CIDN:

1158 0100001

## NATIVE PEOPLE/AUTOCHTONES

### INVESTIGATION OF THE NEED TO REVISE "LEARN NOT TO BURN" CURRICULUM MATERIALS FOR USE IN ABORIGINAL COMMUNITIES

**Objective:**

To investigate the appropriateness of the U.S. based National Fire Protection Association's "Learn Not To Burn", level 1 curriculum and resource books for aboriginal communities, determine what modifications may be required and determine whether there is a role for the contractor and the Corporation in developing and distributing adapted materials, and the costs to be incurred in doing so.

**CMHC Project Officer:**

P. Archer

**Division:**

Technical Policy and Research  
Division

**Contractor:**

Assembly of First Nations  
1 Nicholas Street  
Suite 904  
Ottawa, Ontario  
K1N 7B7

**CIDN:**

1060 0301002

### PLANNING OF NATIVE NORTHERN COMMUNITIES

**Objective:**

An evaluation of the level of success of existing planning and housing practice for Native communities in the western portion of the Northwest Territories.

**CMHC Project Officer:**

D. Jamieson

**Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

**Contractor:**

Gino A. Pin  
Sub Post Office no. 1  
3502 Raccine Road  
Yellowknife, Northwest  
Territories  
X1A 2S9

**CIDN:**

1462 0200001

### PROJECTIONS OF THE ABORIGINAL POPULATION IN CANADA - SUMMARY REPORT

**Objective:**

Prepare a summary report based on the main report, "Projections of the Population with Aboriginal Identity in Canada, 1991-2016", prepared by Statistics Canada for the Royal Commission on Aboriginal People.

**CMHC Project Officer:**

J. Angus

**Division:**

Socio-Economic Policy and  
Research Division

**Contractor:**

Statistics Canada  
Room 1708  
Main Building  
Tunney's Pasture  
Ottawa, Ontario  
K1A 0T6

**CIDN:**

1511 0200001

#### HEATING AND VENTILATION SYSTEMS FOR NORTHERN HOUSING: AN INVESTIGATION OF DESIGN CRITERIA AND APPROPRIATE TECHNOLOGIES

**Objective:**

To develop a performance based specification for heating and ventilation equipment and systems in existing remote housing; to identify available new and emerging technologies that are appropriate for remote housing heating and ventilation systems; and to evaluate the opportunities for, and potential benefits of, new approaches to heating and ventilating strategies in advanced forms of remote housing.

**CMHC Project Officer:**

D. Hill

**Division:**

Technical Policy and Research Division  
Panel on Energy Research and Development

**Contractor:**

Howell-Mayhew Engineering Inc.  
15006 - 103 Avenue  
Edmonton, Alberta  
T5P 0N8

**CIDN:**

1481 0800001

#### NORTH FILE FACT SHEETS

**Objective:**

To produce fact sheets on northern building technology camera-ready for production.

**CMHC Project Officer:**

R. Duncan

**Division:**

Technical Policy and Research Division

**Contractor:**

Scanada Consultants Limited  
446 Reynolds Street  
Oakville, Ontario  
L6J 3M4

**CIDN:**

0515 0300002

#### RENATURALISATION DES SURFACES DÉCAPÉES AU VOISINAGE DES HABITATIONS DANS LE VILLAGE NORDIQUE DE KUUJJUAQ

**Objet :**

De sélectionner les espèces végétales les plus performantes en fonction des conditions locales; de déterminer les modes les plus efficaces de production des plantes; et d'identifier les techniques les plus appropriées de mise en terre des plantes.

**Agent de projet pour la SCHL :**

M. Desbiens

**Division :**

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

**Contractant :**

Gilles Houle  
Centre d'études nordiques  
Université Laval  
Cité universitaire  
Québec (Québec)  
G1K 7P4

**NIC :**

1457 0200001



## Ongoing Projects/Projets en cours

### **THE RESIDUALIZATION OF RENTAL TENURE: IMPLICATIONS FOR HOUSING POLICY**

#### **Objective:**

Examine how both the rental housing stock and the profile of rental tenants has changed over the past 2 decades from 1971-91; explore how the changing tenant profile is perceived by private rental landlords; and determine if this change is significant in influencing the decisions of private rental landlords to disinvest in rental housing. The emphasis is not on the feasibility of new rental construction but on transactions in the existing rental stock.

#### **CMHC Project Officer:**

M. Macpherson

#### **Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

#### **Contractor:**

Stephen P. Pomeroy  
Focus Consulting  
40 Java Street  
Ottawa, Ontario  
K1Y 3L3

#### **CIDN:**

1463 0200001

## Ongoing Projects/Projets en cours

### **BACKGROUND PAPER ON ALTERNATIVE DEVELOPMENT STANDARDS AND MECHANICAL SYSTEMS**

#### **Objective:**

Prepare a research report entitled "Background Paper on Alternative Development Standards" which will document progress made to date on local and regional

alternative development standards in Canada and the U.S. and discuss future research and policy requirements in this area.

#### **CMHC Project Officer:**

D. D'Amour

#### **Division:**

Socio-Economic Policy and  
Research Division

#### **Contractor:**

Berridge Lewinberg Greenberg  
111 Queen Street East  
Suite 200  
Toronto, Ontario  
M5C 1S2

#### **CIDN:**

1438 0200001  
1438 0201001

## RESIDENTIAL REHABILITATION/ RÉNOVATION DE LOGEMENTS

### Completed Reports/Rapports terminés

#### GUIDE DES RESSOURCES DU RÉNOVATEUR.

Préparé par Keith Hanson et Brian Marshall, The Energy Technology Access Group Inc. Ottawa: Société canadienne d'hypothèques et de logement, 1995.

\*\* Prix : 25,00 \$ (LNH 6816)

Cette publication fournit aux rénovateurs des informations relatives à l'aspect administratif de la rénovation. Ils y trouveront tous les éléments dont ils ont besoin pour réussir. Que ce soit l'élaboration d'un plan d'affaires ou comment demeurer à la fine pointe d'une industrie en constante évolution, tout y est. On traite des objectifs, de la gestion financière, des ressources humaines, de la vente et de la commercialisation de l'établissement des coûts et des estimations, de la gestion d'entreprise ainsi que des relations avec la clientèle.

Le guide fait également état de certaines des tendances qui influenceront vraisemblablement sur le secteur de la rénovation au cours des prochaines années, soit le désir d'améliorer la qualité de l'environnement, l'établissement de liens d'affaires étroits entre les entrepreneurs de rénovation et les fabricants, la rénovation «tous services», c'est-à-dire le fait d'offrir tous les services de rénovation sous un même toit, et l'utilisation accrue de la technologie de la maison intelligente.

NOTE: Also available in English under the title: Renovator's Resource Guide (NHA 6816).

#### RENOVATOR'S RESOURCE GUIDE.

Prepared by Keith Hanson and Brian Marshall, The Energy Technology Access Group Inc. Ottawa: Canada Mortgage and Housing Corporation, 1995. \*\* Price: \$25.00 (NHA 6816)

This guide provides renovators with information relating to the business aspects of renovation. Everything the renovation professional needs to know to run a profitable business, from developing a business plan to remaining on top of a changing industry, is here in this handbook. Sections on business goals, financial management, human resources, sales and marketing, costing and estimating, managing the job and customer relations are included. The guide also examines some of the trends that are likely to affect the renovation business in the coming years. They are: the desire for improved environmental quality; sophisticated business linkages between renovation contractors and manufacturers; package selling - i.e., providing a one-stop shopping concept; and the increasing use of smart house technology.

NOTE : Aussi disponible en français sous le titre : Guide des ressources du rénovateur (LNH 6816).

# ASSESSMENT REPAIR STRATEGY FOR EXISTING BUILDINGS CONSTRUCTED WITH MASONRY VENEER STEEL STUD WALLS

### Objective:

To develop an overall assessment strategy for determining the extent of repairs required for existing buildings constructed with brick veneer steel stud systems.

**CMHC Project Officer:**

J. Rousseau

**Division:**

Technical Policy and Research  
Division**Contractor:**

T.W.J. Trestain  
573 Durie Street  
Toronto, Ontario  
M6S 3H2

**CIDN:**

0937 0300001

# HOMEOWNER MOTIVATION AND INNER CITY REVITALIZATION: AN EXAMINATION OF RELATED FACTORS IN WINNIPEG

**Objective:**

To carry out an examination of homeowner motivation and inner city revitalization; to identify three inner city areas for analysis in the City of Winnipeg, selected on the basis of high levels of renovation activity.

**CMHC Project Officer:**

R. Goatcher

**Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

**Contractor:**

Christine D. McKee  
City Planning Department  
University of Manitoba  
Faculty of Architecture  
201 Russell Building  
Winnipeg, Manitoba  
R3T 2N2

**CIDN:**

1277 0200001

## LOCAL INDICATORS OF RENOVATION SPENDING

### Objective:

To carry out a study of local indicators of renovation spending; determine the reliability of current measures of renovation activity at the CMA level; make recommendations for the construction of comprehensive, reliable and timely indicators of renovation activity, and develop the indicators for selected CMAs.

**CMHC Project Officer:**

G. Proulx

Division:

Market Analysis Centre

**Contractor:**

Clayton Research Associates  
Limited  
1580 Kingston Road  
Scarborough, Ontario  
M1N 1S2

**CIDN:**

1234 1000001

## MASONRY VENEER STEEL STUD RENOVATION STRATEGIES

### Objective:

To evaluate different retrofit brick ties for repairing existing brick veneer/steel stud systems.

## CMHC Project Officer:

J. Rousseau

**Division:**

Technical Policy and Research  
Division**Contractor:**

University of Waterloo  
Building Engineering Group  
Waterloo, Ontario  
N2L 3G1

**CIDN:**

0787 0300001



## SEWAGE DISPOSAL/EAUX USÉES

### Ongoing Projects/Projets en cours

#### **FACULTATIVE TREATMENT SYSTEM**

**Objective:**

To develop, install and test a facultative treatment non-mechanical sewage treatment system for household waste.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Socio-Economic Policy and Research Division  
Housing Technology  
Incentives Program

**Contractor:**

Denis Barker & Associates Ltd.  
3930 Quadra Street  
Victoria, British Columbia  
V8X 1J4

**CIDN:**

1499 0200001

#### **IMPROVEMENTS IN ON-SITE WASTEWATER TREATMENT**

**Objective:**

To evaluate the performance of household water conservation, in association with an innovative technology for septic tank effluent treatment and nitrogen removal, to provide more cost-effective and reliable on-site wastewater treatment.

**CMHC Project Officer:**

A. Houston

**Division:**

Technical Policy and Research Division

**Contractor:**

Technical University of Nova Scotia  
Centre for Water Resources Studies  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1047 0200001

#### **LOWER COST ALTERNATIVE FOR MUNICIPAL SEWER INSPECTION AND MAINTENANCE**

**Objective:**

To reduce subdivision servicing costs by the design, development and testing of a technically sound and innovative structure to replace, at a lower cost, the conventional manhole.

**CMHC Project Officer:**

A. Houston

**Division:**

Socio-Economic Policy and Research Division  
External Research Program

**Contractor:**

John S. Krebs  
Butler Krebs & Associates Inc.  
8616 - 51 Avenue  
Suite 210  
Edmonton, Alberta  
T6E 6E6

**CIDN:**

1274 0200001

#### **A NEW PROCEDURE FOR EVALUATING THE PERFORMANCE OF ON-SITE SYSTEMS**

**Objective:**

To assess the value of the leachfield evaluation test; a method for assessing the hydraulic performance of an on-site sewage disposal system.

**CMHC Project Officer:**

A. Houston

**Division:**

Socio-Economic Policy and Research Division  
External Research Program

**Contractor:**

Dr. Donald H. Waller  
Technical University of Nova Scotia  
Centre for Water Resources Studies  
P.O. Box 1000  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1289 0200001

### ANALYSIS OF THE RELATIVE COST AND EFFECTIVENESS OF SELECTED SOCIAL RENTAL HOUSING PROGRAMS

#### Objective:

To assess the effectiveness of selected rental housing programs in addressing the problems of affordability, adequate supply, and housing quality. The study will determine how traditional non-profit supply programs and shelter allowances perform, over time under different market conditions.

#### CMHC Project Officer:

P. Deacon

#### Division:

Socio-Economic Policy and Research Division

#### Contractor:

Canadian Housing and Renewal Association  
251 Laurier Avenue West  
Suite 304  
Ottawa, Ontario  
K1P 5J6

#### CIDN:

1351 0600001

### CASE STUDIES OF COMMUNITY IMPACTS FOR THE EVALUATION OF THE URBAN SOCIAL HOUSING PROGRAMS

#### Objective:

Case studies of community impacts for the evaluation of the urban social housing programs.

#### CMHC Project Officer:

P. Streich

#### Division:

Program Evaluation Division

#### Contractor:

SPR Associates Incorporated  
2 Carleton Street  
Suite 804  
Toronto, Ontario  
M5B 1J3

#### CIDN:

1008 0501010

### DEVELOPMENT OF INDICATORS OF QUALITY OF LIFE, HEALTH AND WELL-BEING IN CANADIAN SOCIAL HOUSING: IDENTIFICATION OF INDICATORS OF HEALTH PROMOTING SOCIAL HOUSING SETTINGS

#### Objective:

To develop indicators of health and well-being which would apply to social housing and could be used by CMHC for research, policy analysis and program evaluation.

#### CMHC Project Officer:

D. Chamberland

#### Division:

Socio-Economic Policy and Research Division  
Centre for Future Studies in Housing and Living Environments

#### Contractor:

Veronica Doyle  
1317 Richardson Street  
Victoria, British Columbia  
V8S 1P6

#### CIDN:

1023 0200003

### EVALUATION OF THE URBAN SOCIAL HOUSING PROGRAMS

#### Objective:

To record data from selected fields of a number of survey forms and to prepare electronic data files from the recorded data elements.

#### CMHC Project Officer:

C. Wilson

#### Division:

Program Evaluation Division

#### Contractor:

ISM Information Systems Management  
Box 201  
1200 St. Laurent Boulevard  
Ottawa, Ontario  
K1K 3B8

#### CIDN:

1008 0501009

### NATIONAL ENABLEMENT DEMONSTRATION INITIATIVE

#### Objective:

To undertake the development and coordination of a national enablement demonstration initiative to teach social housing groups the skills and techniques to use in order to develop self-help housing strategies.

#### CMHC Project Officer:

J. Burr

#### Division:

Delivery and FP Relations Division

#### Contractor:

Canadian Housing and Renewal Association  
251 Laurier Avenue West  
Suite 401  
Ottawa, Ontario  
K1P 5J6

#### CIDN:

1436 1500001

## SOCIAL HOUSING/LOGEMENT SOCIAL

### **PANEL ON HOUSING AND SOCIAL POLICY AT THE 7TH BI-ANNUAL SOCIAL WELFARE POLICY CONFERENCE**

#### **Objective:**

To arrange and conduct a panel discussion on housing and social policy at the 7th Bi-annual Social Welfare Policy Conference and to produce and distribute a report on the panel proceedings.

#### **CMHC Project Officer:**

D. Chamberland

#### **Division:**

Socio-Economic Policy and  
Research Division  
Centre for Future Studies in  
Housing and Living  
Environments

#### **Contractor:**

Caledon Institute of Social  
Policy  
Holland Cross  
1600 Scott Street  
Suite 620  
Ottawa, Ontario  
K1Y 4N7

#### **CIDN:**

1487 0200001

### **PROTOCOLE DE RECHERCHE POUR ÉVALUER LE RÔLE DU LOGEMENT SOCIAL AVEC SUPPORT COMMUNAUTAIRE**

#### **Objet :**

De développer un protocole de recherche pour évaluer le rôle du logement social avec support communautaire sur l'amélioration des conditions de vie dans un processus continu d'intégration sociale pour les personnes seules, à faible revenu et à risque de marginalisation.

#### **Agent de projet pour la SCHL :**

J. Taggart

#### **Division :**

Division des politiques et de  
la recherche en matière  
socio-économique

#### **Contractant :**

La Fédération des OSBL  
d'habitation de Montréal  
1650, rue St-Timothée  
Suite 206  
Montréal (Québec)  
H2L 3P1

#### **NIC :**

1471 0100001

### **CHANGING VALUES - CHANGING COMMUNITIES: A GUIDE TO THE DEVELOPMENT OF HEALTHY, SUSTAINABLE COMMUNITIES.**

*Prepared by Hygeia Consulting Services and REIC Ltd. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

This Guide examines four alternative planning approaches which have emerged in response to concerns about the livability and sustainability of our communities; they are neo-traditional planning, the pedestrian pocket, cohousing and the eco-village concept. The Guide is intended to aid readers in evaluating these approaches in terms of how they contribute to the development of healthy, sustainable communities. It provides an evaluative framework which defines the essential attributes of a healthy, sustainable community, identifies related planning goals and objectives, and identifies some of the "tools" which communities may use to meet their goals. The tools are presented under six major headings: land use planning, building form and technology, infrastructure, transportation, economic development and social development.

The Guide also presents several case studies which exemplify the four approaches, and reviews them to illustrate how the evaluative framework may be applied. The case studies range from a new community for 27,000 people to a housing project with 17 units. Although the focus of the Guide is on planning approaches for new greenfields development, much of the information is applicable to redevelopment and renewal projects.

NOTE : Aussi disponible en français sous le titre : Valeurs en évolution dans des collectivités en évolution : guide des collectivités saines et durables.

### **HEALTHY HOUSING: A WINNING DESIGN: MARTIN LIEFHEBBER AND ASSOCIATES, CREATIVE COMMUNITIES, TORONTO = MAISONS SAINES : UN MODÈLE GAGNANT : MARTIN LIEFHEBBER AND ASSOCIATES, CREATIVE COMMUNITIES, TORONTO.**

*Ottawa: Canada Mortgage and Housing Corporation, 1995 (NHA/LNH 6749).*

Recognizing the effect of housing on the environment, CMHC held a national Healthy Housing Design Competition to stimulate industry to develop a new approach to housing design. The designs were to harmonize with the community, be environmentally sound, offer healthy indoor environments and remain affordable. Two first place prizes were awarded, both in the urban infill category. One winning design has already been built, in Vancouver. The other is the Toronto Healthy House.

This leaflet describes the Toronto Healthy House, a three-bedroom infill home developed by Creative Communities and designed by architect Martin Liefhebber. The Toronto Healthy House is completely self-sufficient. It harvests its own energy, collects rainfall and purifies it for drinking, and biologically treats its own waste. As a result, the house does not need to be connected to municipal services. The wide array of Healthy Housing features demonstrated in this award-winning design can work together or separately. Some features may appear to be ahead of their time, but most can be incorporated today into new homes or renovation projects.

NOTE: Bilingual/bilingue



## **SUSTAINABLE DEVELOPMENT/ DÉVELOPPEMENT DURABLE**

### **MAISONS SAINES : UN MODÈLE GAGNANT : MARTIN LIEFHEBBER AND ASSOCIATES, CREATIVE COMMUNITIES, TORONTO = HEALTHY HOUSING: A WINNING DESIGN: MARTIN LIEFHEBBER AND ASSOCIATES, CREATIVE COMMUNITIES, TORONTO.**

*Ottawa : Société canadienne d'hypothèques et de logement, 1995. (LNH/NHA 6749)*

Consciente de l'effet des habitations sur l'environnement, la SCHL a organisé le Concours de conception de maisons saines dans le but d'inciter l'industrie à mettre au point de nouvelles façons de concevoir des habitations. Les concepts devaient s'harmoniser avec la collectivité, être sains du point de vue environnemental et offrir un milieu intérieur sain tout en demeurant abordables. Deux premiers prix ont été attribués, les deux dans la catégorie «Logement intercalaire urbain». L'un de ces concepts a déjà été construit à Vancouver, l'autre s'appelle la maison saine de Toronto.

Ce dépliant décrit la maison saine de Toronto, une maison intercalaire de trois chambres à coucher mise au point par Creative Communities et conçue par l'architecte Martin Liefhebber. La maison saine de Toronto est complètement autonome, c'est-à-dire qu'elle produit sa propre énergie, recueille l'eau de pluie pour la purifier aux fins de consommation et fait subir à ses propres déchets un traitement biologique. Cette maison n'a donc pas besoin d'être raccordée aux services municipaux. Les nombreuses caractéristiques propres à une maison saine dont est doté ce concept primé peuvent être exploitées ensemble ou séparément. Bien que certaines puissent paraître très avant-gardistes, la plupart peuvent être intégrées dès aujourd'hui aux maisons en construction ou aux projets de rénovation.

NOTE : *Bilingue/bilingual.*

### **VALEURS EN ÉVOLUTION DANS DES COLLECTIVITÉS EN ÉVOLUTION : GUIDE DES COLLECTIVITÉS SAINES ET DURABLES.**

*Préparé par Hygeia Consulting Services et REIC Ltd. Préparé pour la Division de la recherche, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1995.*

Ce Guide présente quatre modèles de planification de rechange qui ont été proposés pour répondre aux préoccupations sur la qualité de vie et la durabilité de nos collectivités. Il s'agit des démarches de planification néo-traditionnelle, du quartier piéton, des habitations communautaires et de l'éco-village. Le Guide a pour objet d'aider les lecteurs à évaluer ces démarches du point de vue de leur capacité à contribuer à l'aménagement de collectivités saines et durables. Il présente un cadre d'évaluation qui définit les attributs essentiels d'une collectivité saine et durable, il énonce les buts et objectifs de planification et présente certains des outils que les collectivités peuvent employer pour atteindre les objectifs visés. Les outils sont regroupés en six grandes catégories : planification de l'occupation des sols, architecture et technologie de construction des immeubles, infrastructures, transports, expansion économique et développement social.

Le Guide présente aussi des études de cas qui illustrent les quatre démarches tout en indiquant comment appliquer le cadre d'évaluation. Ces études de cas portent notamment sur une nouvelle collectivité de 27 000 habitants et un projet d'ensemble de 17 logements. Bien que le Guide porte principalement sur les démarches de planification de nouveaux ensembles résidentiels, la plupart des renseignements qu'il contient s'appliquent aux projets de réaménagement et de rénovation.

NOTE: Also available in English under the title: *Changing Values - Changing Communities: A Guide to the Development of Healthy, Sustainable Communities.*

**CMHC COLLABORATION  
WITH FCM CONCERNING  
THE OECD PROJECT GROUP  
ON THE ECOLOGICAL CITY**

**Objective:**

To produce a draft national overview paper and undertake other activities to represent Canada in relation to the project of the Organization for Economic Cooperation and Development (OECD) entitled "The Ecological City".

**CMHC Project Officer:**

P. Spurr

**Division:**

International Relations  
Division

**Contractor:**

Federation of Canadian  
Municipalities  
24 Clarence Street  
Ottawa, Ontario  
K1N 5P3

**CIDN:**

1313 0900001

**DEVELOPMENT OF  
COMMUNITY-BASED SOCIAL  
MARKETING APPROACHES  
FOR ACHIEVING  
SUSTAINABILITY**

**Objective:**

Accelerate the shift towards sustainability through design, testing and refining of six community-based social marketing campaigns promoting healthier housing and communities, sustainable use of renewable resources, reduced air and water pollution, reduced waste disposal and reduced climate change problems.

**CMHC Project Officer:**

S. Rothwell

**Division:**

Technical Policy and  
Research Division

**Contractor:**

Supply and Services Canada  
Environmental Innovation  
Program  
1201, Phase III  
Place du Portage  
Hull (Québec)  
K1A 0S5

**CIDN:**

1497 0200001

**HEALTHY HOUSING  
DEMONSTRATION**

**Objective:**

The construction of a demonstration autonomous house in Toronto in general accordance with the winning housing design in CMHC's healthy housing design competition.

**CMHC Project Officer:**

S. Rothwell

**Division:**

Technical Policy and  
Research Division

**Contractor:**

Liefhebber, Martin Architect  
Inc.  
177 First Avenue  
Toronto, Ontario  
M4M 1X3

**CIDN:**

0779 0202003

**PERFORMANCE  
MONITORING OF THE  
VANCOUVER HEALTHY  
HOUSE**

**Objective:**

To monitor and analyze the performance (energy usage, water consumption and indoor air quality) of CMHC's Vancouver Healthy House.

**CMHC Project Officer:**

C. Ives

**Division:**

Technical Policy and  
Research Division

**Contractor:**

SAR Engineering Ltd.  
8884-15th Avenue  
Burnaby, British Columbia  
V3N 1Y3

**CIDN:**

0779 0203018

**SUSTAINABLE LANDSCAPE  
DESIGN FOR RESIDENTIAL  
DEVELOPMENTS**

**Objective:**

To highlight the link between sustainable development for housing with the condition, composition and use of native vegetation.

**CMHC Project Officer:**

S. Sandrock

**Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

**Contractor:**

Karen Vagelatos  
Vagelatos Associates  
Landscape Architecture Ltd.  
207-2211 West 4th Avenue  
Vancouver, British Columbia  
V6K 4S2

**CIDN:**

1466 0200001

## **SUSTAINABLE DEVELOPMENT / DÉVELOPPEMENT DURABLE**

### **TESTING CONSUMER RECEPTIVITY TO SUSTAINABLE AND MORE AFFORDABLE SUBURB DESIGN IN CALGARY**

#### **Objective:**

To address the question:  
are Canadian consumers  
(houseseekers, homebuyers)  
receptive to residential  
community design that  
incorporates sustainable  
development principles and  
performance characteristics?

#### **CMHC Project Officer:**

F. Grammenos

#### **Division:**

Socio-Economic Policy and  
Research Division  
External Research Program

#### **Contractor:**

William T. Perks  
Faculty of Environmental  
Design  
Calgary University  
2500 University Drive, N.W.  
Earth Sciences  
Calgary, Alberta  
T2N 1N4

#### **CIDN:**

1278 0200001

**PLANNING FOR TELEWORK AND HOME-BASED EMPLOYMENT: A CANADIAN SURVEY ON INTEGRATING WORK INTO RESIDENTIAL ENVIRONMENTS.**

*Prepared by Penny Gurstein, Centre for Human Settlements, University of British Columbia. Prepared for Centre for Future Studies in Housing and Living Environments, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995, 2 vol.*

**Volume 1.** Main Report (\$12.99 + GST + Shipping) NOTE: Available from EDM/CMHC, P.O. Box 3077, Markham, ON, L3R 6G4, Tel.: 1-800-668-CMHC.

**Volume 2.** Summary Report (free) NOTE: Available from Canadian Housing Information Centre, 700 Montreal Road, Ottawa, ON, K1A 0P7.

It is estimated that nearly one-quarter of the working population does some or all of its paid labour at home. This study investigates the impact of telework and home-based employment on the use of the home and neighbourhood. The study also examines the implications of this trend for the planning and design of homes and communities. A mail-out survey was conducted to obtain detailed data on: household characteristics; work profiles of the home-based worker; spatial organization of the home and the work site; telecommunications usage; and the role of the home and community to the home-based worker.

Distinct patterns emerge between teleworkers and other home-based workers. Teleworkers are better educated and have a larger annual household income than other home-based workers. The majority of home-based workers live in single family detached homes in suburban communities; many have made modifications to their homes to make it suitable for work. These include renovations, rewiring and cosmetic treatment.

Some of the major problems with working at home include lack of storage for materials and products, and intrusions from family and friends. To be successful, workers have to have an organized work area with clear boundaries between work and household spaces. Over one-quarter of home-based workers expressed interest in working from a neighbourhood telework centre or satellite office.

Home-based workers generally feel that the municipal regulations governing their occupations are too restrictive. These regulations do not reflect the nature of most of their work which is of a non-toxic, non-hazardous nature and rarely has a major negative impact on the functioning of their neighbourhoods. It appears that many home-based workers want their municipalities to reconsider their policies on home occupations to include the revamping of zoning and regulations which more accurately reflect the nature of their work.

Clearly, new work options and the telecommunications technologies to support these options will allow more choices in ways of living and working, resulting in changes in social and spatial relationships. The housing sector has just begun to assess the potential impacts of more Canadians working from home. This survey suggests that workers are satisfied with working at home, but modifications to their homes and communities are required to accommodate domestic and work activities.

NOTE : Aussi disponible en français sous le titre : Télétravail et travail à domicile : enquête sur l'intégration du travail en milieu résidentiel au Canada.



## TELEWORK/TÉLÉTRAVAIL

### TÉLÉTRAVAIL ET TRAVAIL À DOMICILE : ENQUÊTE SUR L'INTÉGRATION DU TRAVAIL EN MILIEU RÉSIDENTIEL AU CANADA.

Préparé par Penny Gurstein, Centre for Human Settlements, Université de Colombie-Britannique. Préparé pour le Centre d'études prospectives sur l'habitation et le cadre de vie, Société canadienne d'hypothèques et de logement. Ottawa : SCHL, 1995, 2 vol.

**Volume 1.** Rapport principal (12,99 \$ + TPS + frais d'expédition)

NOTE : Disponible par la poste : EDM/SCHL, C.P. 3077, Markham (Ont.), L3R 6G4, Tél. : 1-800-463-SCHL.

**Volume 2.** Sommaire (gratuit)

NOTE : Disponible par la poste : Centre canadien de documentation sur l'habitation, 700 chemin Montréal, Ottawa (Ontario) K1A 0P7.

On estime que près du quart de la population active effectue à domicile la totalité ou une partie de leur travail rémunéré. Cette étude analyse les répercussions du télétravail et du travail à domicile sur l'utilisation du domicile et du quartier ainsi que les incidences sur la planification et la conception des domiciles et des collectivités. Une enquête par la poste a été menée en vue d'obtenir des renseignements détaillés sur les aspects suivants : les caractéristiques du ménage; les caractéristiques du travail effectué à domicile; l'aménagement physique du domicile et du lieu de travail; l'utilisation des télécommunications; et le rôle du domicile et de la collectivité dans la vie du travailleur à domicile.

On constate que les télétravailleurs ont des profils distincts des autres travailleurs à domicile. Les télétravailleurs possèdent un niveau d'éducation plus élevé, et le revenu annuel de leur ménage dépasse celui des autres travailleurs à domicile. La majorité des travailleurs à domicile vivent dans des maisons unifamiliales en banlieue. De nombreux travailleurs ont apporté des modifications à leur résidence pour qu'elle convienne à leurs activités commerciales, notamment des rénovations, des améliorations aux canalisations électriques et des changements de nature cosmétique.

Certains des principaux problèmes que comporte le travail à domicile découlent du manque d'espace d'entreposage pour les produits et les matériaux ainsi que des interruptions de la part des membres de la famille et des amis. En général, le succès du travail à domicile nécessite l'affectation d'un lieu de travail organisé, avec délimitation des aires réservées au travail et à la vie du ménage. Plus du quart des travailleurs à domicile seraient intéressés à exercer leurs activités depuis un centre de télétravail ou un bureau satellite au sein du quartier.

En règle générale, les travailleurs à domicile estiment que les règlements municipaux régissant leurs activités sont trop contraignants. Ces règlements ne tiennent pas compte de la nature de la plupart de leurs activités, qui ne comportent aucune toxicité ni danger physique et n'ont que rarement des répercussions négatives importantes sur le fonctionnement de leur quartier. Il appert que de nombreux travailleurs à domicile veulent que leur municipalité examine l'à-propos de modifier les politiques concernant le travail à domicile, notamment en matière de zonage, et les règlements connexes afin de mieux tenir compte de la nature de leurs activités.

Il est manifeste que les nouvelles options de travail et les méthodes de télécommunications à l'appui de ces options permettront davantage de choix quant aux façons de vivre et de travailler, ce qui changera les rapports sociaux et spatiaux. Le secteur du logement vient tout juste de commencer à évaluer les répercussions potentielles de la tendance du travail à domicile chez les Canadiens. Cette enquête laisse croire que les travailleurs sont satisfaits du travail à domicile, mais que des modifications à leur logement et à leur collectivité sont nécessaires pour accommoder leurs activités de travail et de vie privée.

NOTE: Also available in English under the title: Planning for Telework and Home-Based Employment: A Canadian Survey on Integrating Work into Residential Environments.

## Ongoing Projects/Projets en cours

### BEYOND THE HOME OFFICE: AN EXPLORATORY STUDY OF RESIDENTIALLY- BASED SHARED TELEWORK SPACES

#### Objective:

To develop and explore a new concept - a residentially-based shared telework space.

#### CMHC Project Officer:

D. Chamberland

#### Division:

Socio-Economic Policy and  
Research Division  
External Research Program

#### Contractor:

Laura C. Johnson Associates  
Inc.  
374 Sackville Street  
Toronto, Ontario  
M4X 1S5

#### CIDN:

1458 0200001

## Ongoing Projects/Projets en cours

### LES ENSEMBLES RÉSIDENTIELS ET LA SÉCURITÉ ROUTIÈRE

**Objet :**

La présente recherche porte sur l'étude des rapports entre la forme des milieux résidentiels et la sécurité des déplacements des différents usagers de la route.

**Agent de projet pour la SCHL :**

L. Howell

**Division :**

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

**Contractant :**

Denise Piché  
École d'architecture  
Université Laval  
Québec (Québec)  
G1K 7P4

**NIC :**

0925 0200001

### PAYSAGES DE L'INTÉRIEUR DANS L'ÎLE DE MONTRÉAL

**Objet :**

Cette étude part de la prémisse que le paysage public montréalais a été principalement conçu à partir de courants de pensées externes certains étant bien connus, identifiés et documentés, mais que par sur le sens qu'accordent des Montréalais à leur paysage à travers leurs propres interventions et commandes paysagères.

**Agent de projet pour la SCHL :**

M.H. Siedlikowski

**Division :**

Division des politiques et de la recherche en matière socio-économique  
Programme de subventions de recherche

**Contractant :**

Madame Danièle Routaboule  
École d'Architecture de  
Paysage  
Université de Montréal  
5620, rue Darlington  
Montréal (Québec)  
H3C 3J7

**NIC :**

1284 0200001

### QUALITY OF LIFE IN THE GREATER TORONTO AREA

**Objective:**

To develop, test and document a methodology to collect attitudinal or subjective data as part of a broader study on quality of life in the greater Toronto area. The indicators developed and tested as part of this research project will complement the existing indicators of municipal quality of life in CMHC's COMLE model, which is available to municipalities and community groups across Canada.

**CMHC Project Officer:**

D. Chamberland

**Division:**

Socio-Economic Policy and Research Division  
Centre for Future Studies in Housing and Living Environments

**Contractor:**

Ministry of Municipal Affairs  
777 Bay Street  
Toronto, Ontario  
M5G 2E5

**CIDN:**

1470 0200001

### VENTILATION CONTROL IN MEDIUM AIR TIGHTNESS HOUSES.

*Prepared by Building Science Division, Saskatchewan Research Council. Prepared for Research Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1995.*

This housing research project had three major objectives. The first objective was to determine information on air pollutant source strengths in 20 houses of medium air tightness; a second objective was to determine the appropriateness of the proposed changes to the 1995 Building Code related to ventilation and house depressurization; a third objective was to field test an exhaust-only ventilation system that is controlled based on the outdoor air temperature, and to perform computer modelling on this ventilation scheme.

Four types of pollutants were measured: formaldehyde; volatile organic compounds, relative humidity and carbon dioxide. The formaldehyde readings in the houses averaged 0.034 ppm, and 19 out of the 20 houses measured below the Health Canada guideline of 0.1 ppm. In addition, 19 out of the 20 houses were able to meet the 0.05 ppm Health Canada target for new houses. The sum of the twenty-six VOCs sampled in the houses averaged 127 micrograms/m<sup>3</sup>. D-limonene was the chemical that registered highest in 13 out of the 20 houses. Carbon dioxide values, based on two spot measurements in each of the 20 houses, averaged 708 ppm, with the highest value equal to 1127 ppm. These measurements were all made in the living room of the houses during the daytime. Relative humidity measurements in the houses averaged 35%, with values varying between a low of 18% and a high of 64%.

Air change rates measured in 19 of the 20 houses varied from a low of 0.08 air changes per hour to a high of 0.43 ac/h. The average air change rate was 0.20 ac/h. The average air tightness of the 20 houses was 2.61 ac/h at 50 Pa. Eighteen of the 20 houses tested were able to meet the CGSB backdrafting standard of 5 pascals for intermittent operation of fans. The two houses unable to meet the standard had range hood fans with flows of 110 and 120 L/s.

Outdoor Temperature Controlled ventilation (OTCV) systems were installed and monitored in 4 houses. The monitoring period extended for a 12 week period from April through June 1994. Air flows between 28 and 34 L/s were used for the exhaust fans. The outdoor temperature threshold above which the exhaust fan would operate for the four houses ranged between 6.0° C and 8.5° C. Compared to natural ventilation, the OTCV strategy was found to reduce indoor carbon dioxide levels in the houses by an average of 239 ppm in the four houses over the monitoring period. Using computer simulation with the HOT-2000 program, the increase in annual space heating energy associated with OTCV was estimated to range from 1.1 to 2.6% for the four houses tested. Based on these measured results, the OTCV systems shows considerable promise in improving indoor air quality in houses in the medium air tightness range with only small incremental increases in annual space heating requirements.



## Ongoing Projects/Projets en cours

### COMPLYING WITH RESIDENTIAL VENTILATION REQUIREMENTS IN THE 1990 NATIONAL BUILDING CODE

**Objective:**

To revise and update CMHC's existing "Complying with Residential Ventilation Requirements in the 1990 National Building Code" to meet the 1995 NBC ventilation requirements.

**CMHC Project Officer:**

T. Marshall

**Division:**

Technical Policy and Research  
Division

**Contractor:**

Unies Ltd.  
1666 Dublin Avenue  
Winnipeg, Manitoba  
R3H 0H1

**CIDN:**

1413 0300002  
1413 0301001

### DEVELOPMENT OF EFFICIENCY IMPROVEMENT TIMELINESS FOR RESIDENTIAL VENTILATION EQUIPMENT

**Objective:**

To assemble information on residential mechanical ventilation equipment (fans, blowers, heat exchangers), and to develop a consensus on how quickly the efficiency of these devices can and should be improved over the next decade.

**CMHC Project Officer:**

J. White

**Division:**

Technical Policy and Research  
Division

**Contractor:**

Buchan Lawton Parent Ltd.  
5370 Canotek Road  
Ottawa, Ontario  
K1J 8X7

**CIDN:**

1242 0200001

### FIELD STUDY OF OCCUPANT INTERACTIONS AND VENTILATION EFFECTIVENESS OF HEAT RECOVERY VENTILATION SYSTEMS

**Objective:**

To conduct a field study of occupant interactions and ventilation effectiveness of heat recovery ventilation systems.

**CMHC Project Officer:**

D. Hill

**Division:**

Technical Policy and Research  
Division  
Panel on Energy Research  
and Development

**Contractor:**

Buchan Lawton Parent Ltd.  
Suite 210  
30 East Beaver Creek  
Richmond Hill, Ontario  
L4B 1G6

**CIDN:**

1376 0800001  
1376 0200001

### HVAC DESIGN AND INSTALLATION PRACTICES IN MID AND HIGH-RISE BUILDINGS

**Objective:**

To conduct a study to evaluate the changes required to existing HVAC design and installation practices in mid and high-rise buildings in order to ensure compliance with the 1995 National Building and Energy Codes and to study the performance of ventilation systems within these types of buildings.

**CMHC Project Officer:**

D. Hill

**Division:**

Technical Policy and Research  
Division

**Contractor:**

Sheltair Scientific Ltd.  
#2 - 3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

**CIDN:**

1424 0200001

### OPTIMIZE RESIDENTIAL HVAC DUCTWORK SYSTEMS

**Objective:**

To conduct a study to assess the potential to optimize residential HVAC ductwork systems.

**CMHC Project Officer:**

D. Hill

**Division:**

Technical Policy and Research  
Division

**Contractor:**

Allen Associates  
400 Mount Pleasant Road  
Suite 5  
Toronto, Ontario  
M4S 2L6

**CIDN:**

1431 0200001

## **PRESSURE MODERATED SCREENED WALL SYSTEMS**

### **Objective:**

To study the mechanics involved and to attempt to quantify the number, nature and location of vents in the exterior screen of per walls for optimum ventilation drying and pressure moderation; to measure the extent and mechanism of ventilation drying in an idealized per wall; and to measure the extent and mechanism of pressure moderation in an idealized per wall.

### **CMHC Project Officer:**

P.M. Busque

### **Division:**

Socio-Economic Policy and Research Division  
External Research Program

### **Contractor:**

Eric F.P. Burnett  
University of Waterloo  
Waterloo, Ontario  
N2L 3G1

### **CIDN:**

1273 0200001

## **SCIENTIFIC RESEARCH AND DEVELOPMENT CONCERNING VENTILATION SYSTEMS FOR NEW AND EXISTING HOUSES WITH ELECTRIC BASEBOARD HEATING**

### **Objective:**

To identify designs of simple ventilation air distribution systems that are suitable for new and existing houses that lack fully ducted forced-air heating systems.

### **CMHC Project Officer:**

D. Hill

### **Division:**

Technical Policy and Research Division

### **Contractor:**

National Research Council  
Institute for Research in Construction  
Building M-20  
Ottawa, Ontario  
K1A 0R6

### **CIDN:**

1124 0800001

## **TEST-RIG FOR EVALUATING RESIDENTIAL MOTOR-FAN SET PERFORMANCE**

### **Objective:**

Development and testing of a device for testing the performance of residential ventilating equipment.

### **CMHC Project Officer:**

J. White

### **Division:**

Technical Policy and Research Division  
Panel on Energy Research and Development

### **Contractor:**

Sheltair Scientific Ltd.  
2-3661 West 4th Avenue  
Vancouver, British Columbia  
V6R 1P2

### **CIDN:**

1368 0800001  
1368 0200001

## **TESTING EQUIPMENT FOR CONFIRMATION OF AIR TIGHTNESS IN AIR BARRIERS**

### **Objective:**

To develop and test a working prototype chamber air leakage detection device.

### **CMHC Project Officer:**

M. Macpherson

### **Division:**

Socio-Economic Policy and Research Division  
Housing Technology Incentives Program

### **Contractor:**

Retro-Specs Limited  
108 Paramount Road  
Winnipeg, Manitoba  
R2X 2W3

### **CIDN:**

1503 0200001

## Ongoing Projects/Projets en cours

### APPLICATION FOR SHOWER WASTE WATER HEAT RECOVERY

**Objective:**

To test the performance of a heat recovery shower product.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Socio-Economic Policy and  
Research Division  
Housing Technology  
Incentives Program

**Contractor:**

Heat Exchangers NF  
Incorporated  
26 Georgia Drive  
Stephenville, Newfoundland  
A2N 2T5

**CIDN:**

1500 0200001

### DEVELOPMENT OF A RESIDENTIAL WATER USE MODEL

**Objective:**

To carry out the development of a residential water use model.

**CMHC Project Officer:**

P. Russell

**Division:**

Technical Policy and Research  
Division  
Panel on Energy Research  
and Development

**Contractor:**

Centre for Water Resources  
Studies  
Technical University of Nova  
Scotia  
P.O. Box 1000  
1360 Barrington Street  
Halifax, Nova Scotia  
B3J 2X4

**CIDN:**

1422 0200002  
1422 0800001

### HIGH FREQUENCY WATER SHUT OFF CONTROL

**Objective:**

Develop a working prototype of the high frequency water shut off control unit.

**CMHC Project Officer:**

M. Macpherson

**Division:**

Socio-Economic Policy and  
Research Division  
Housing Technology  
Incentives Program

**Contractor:**

Victor J. Diduck  
755 Kyle Drive  
Kamloops, British Columbia  
V2B 7J5

**CIDN:**

1265 0200001

### REVIEW OF WATER SYSTEMS DESIGN AND WASTEWATER TREATMENT TECHNOLOGY FOR CMHC'S TORONTO HEALTHY HOUSE

**Objective:**

To provide specialist advice to the team for CMHC's Toronto Healthy House regarding system design, development and equipment selection for drinking water, recycled water, and wastewater treatment streams, that will work safely and reliably.

**CMHC Project Officer:**

C. Ives

**Division:**

Technical Policy and Research  
Division

**Contractor:**

Al Townsend  
RR no. 1  
Athens, Ontario  
K0E 1B0

**CIDN:**

0779 0207004

#### MEASUREMENT OF SPECTRAL TRANSMITTANCE OF REPRESENTATIVE GLAZING SAMPLES

##### Objective:

To obtain the spectral transmittance data of a representative group of window glazings including two-pane and three-pane assemblies with and without low-emissivity coatings; to present the data in a manner that would allow comparisons of the spectral characteristics of the window assemblies.

##### CMHC Project Officer:

V. Salares

##### Division:

Technical Policy and Research  
Division

##### Contractor:

University of Calgary  
Centre for Livable  
Communities  
2500 University Drive N.W.  
Calgary, Alberta  
T2N 0G3

##### CIDN:

1214 1100004



### Completed Reports/Rapports terminés

#### **COMMUNITY NEEDS AND IMPACTS STUDY OF PROJECT HAVEN SHELTERS: A REPORT FOCUSED ON SHELTERS IN ABORIGINAL COMMUNITIES: FINAL REPORT, FOR THE PROJECT HAVEN EVALUATION.**

*Prepared by SPR Associates Inc. Prepared for the Program Evaluation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

As part of its responsibilities under the Federal Family Violence Initiatives, CMHC has undertaken an evaluation of the Project Haven Program. Seven Aboriginal and six non-Aboriginal shelters were studied. The case studies examined three main areas: service models to address family violence; community needs related to the provision of shelter and services for women and children experiencing family violence; and the impacts of locating a shelter within the community. Two reports were prepared; this report focuses primarily on service delivery in Aboriginal shelters and communities.

One of the most important findings of the case studies was that Aboriginal shelters, as well as other shelters, have been highly successful in developing service models to meet the diverse needs of women and children who have experienced family violence. Aboriginal shelters operated by First Nations or Aboriginal organizations have developed a distinctive model of service delivery to Aboriginal women, successfully integrating elements of Aboriginal culture into their service delivery model. They take a "holistic" approach to providing services which involves the mind, body and spirit as well as, in some cases, a focus on the whole family. Various spiritual ceremonies such as sweat lodges are available and Elders often come to the shelter to counsel, facilitate healing circles and teach traditional culture. Concerns with healing in these communities are found at three levels: the community; the family; and the individual. In line with these priorities, Aboriginal shelters were often found to engage in very extensive non-residential services.

The most pressing community need identified by respondents in Aboriginal communities is for short and long-term housing. The problem is particularly acute in terms of the need for second-stage housing for women leaving shelters. Housing for women and their children is also a serious problem on reserves where waiting lists mitigate against any hope for abused women to obtain adequate housing. Many women have little choice but to leave the community or return to the abusive situation. A number of other unmet community needs were also articulated by respondents, including needs for: additional programs for men who are abusers and counseling for adolescent youth; programs that focus on assisting the whole family to reunite; training programs to qualify Aboriginal professionals to work with families experiencing violence; ongoing support for women who leave the shelter; community outreach initiatives; and advocacy on behalf of women who have experienced family violence.

The research also indicated that shelters generally have an extremely important impact on family violence in Aboriginal communities. While there remains some reluctance to accept the existence of family violence in some communities, the presence of shelters as an option for women is seen as raising awareness of the issues and signals a continuing need for public education to maintain a change in attitudes.

# COMMUNITY NEEDS AND IMPACTS STUDY OF PROJECT HAVEN: A REPORT FOCUSED ON SHELTERS IN NON-ABORIGINAL COMMUNITIES: FINAL REPORT, PROJECT HAVEN EVALUATION.

*Prepared by SPR Associates Inc. Prepared for the Program Evaluation Division, Canada Mortgage and Housing Corporation. Ottawa: CMHC, 1994.*

As part of its responsibilities under the Federal Family Violence Initiatives, CMHC has undertaken an evaluation of the Project Haven Program. Case studies of thirteen Project Haven shelters were carried out between May and July, 1993. The purpose of the case studies was to provide qualitative, in-depth information on the structure and functioning of shelters, community needs regarding services for family violence, community impacts of the shelters, and the shelters' service model. Seven Aboriginal and six non-Aboriginal shelters were studied, and two separate reports were prepared. This report focuses primarily on non-Aboriginal shelters and communities in rural settings.

All of the shelters studied shared a common goal to provide shelter and services to women and children who were victims of family violence. At the same time, notable differences were discovered in approach and philosophy. For example, a multi-faceted service delivery model to the whole family (women, children, teenagers, men) was found to be operating effectively in one community. Several shelters were found to have extensive outreach programs including satellite offices serving large rural areas. In other communities, innovative and comprehensive programs have been put in place not only for the children of shelter clients, but also for other children referred to the programs from the community at large.

Respondents identified family violence as a serious problem in all communities studied, but they stressed that there is no way to estimate the extent of the problem as so much violence remains hidden. Some significant obstacles to addressing family violence in their communities identified by respondents were a lack of financial and human resources to establish new programs or make existing programs more comprehensive, the shortage of both short and long-term housing (causing difficulties for women in abusive situations to find suitable accommodation), and the size of the catchment areas and the resultant transportation difficulties, particularly for women from rural areas. Additional service needs of the communities were identified as expanded services to rural women, immigrant women, young adults, elderly people and men.

It was difficult to assess the impacts of Project Haven shelters on the communities that they serve. However, evidence of community support was visible at many of the shelters. In some communities, extensive networks and inter-agency advisory committees have been established to foster a collaborative approach to family violence. As well, a number of outreach programs, including satellite offices serving large rural populations, were found to be part of the service models of several shelters.

## Ongoing Projects/Projets en cours

### BUILDING FUTURES - HOUSING DOCUMENTARY PROJECT

#### Objective:

To facilitate the production of a video documentary on the development of the Downtown Women's Project with the intent to promote similar "self-help" or "enablement" in other environments.

#### CMHC Project Officer:

G. Weisz

#### Division:

Socio-Economic Policy and  
Research Division

#### Contractor:

Friday Street Productions Ltd.  
1274 May Street  
Victoria, British Columbia  
V8V 2T2

#### CIDN:

1535 0100001

### INVESTIGATION OF ISSUES FOR THE EVALUATION OF THE NEXT STEP PROGRAM

**Objective:**

Review all relevant reports and studies in the field of shelters to assist women from violent situations, with special emphasis on studies related to longer-term, second-stage housing approaches. The study will consider relevant information from Canada, the U.S., Australia, the U.K. and any other international experience.

**CMHC Project Officer:**

P. Streich

**Division:**

Program Evaluation Division

**Contractor:**

Janet McClain  
4C View Avenue  
P.O. Box 1166  
Wolfview, New Brunswick  
B0P 1X0

**CIDN:**

1008 0501006

### INVESTIGATION OF ISSUES FOR THE EVALUATION OF THE NEXT STEP PROGRAM

**Objective:**

To develop a description of the Next Step Program and the projects funded under the 1991-1995 Next Step Program.

**CMHC Project Officer:**

P. Streich

**Division:**

Program Evaluation Division

**Contractor:**

SPR Associates Inc.  
2 Carleton Street  
Suite 804  
Toronto, Ontario  
M5B 1J3

**CIDN:**

1008 0501008

### INVESTIGATION OF ISSUES FOR THE EVALUATION OF THE NEXT STEP PROGRAM

**Objective:**

To investigate the concept of second-stage housing from an operational perspective, and discuss the essential attributes of this type of housing which could be addressed in the evaluation of CMHC's Next Step Program.

**CMHC Project Officer:**

P. Streich

**Division:**

Program Evaluation Division

**Contractor:**

Susan Nelson  
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P.O. Box 465  
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V0R 2H0

**CIDN:**

1008 0501007

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